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Agriculture of Vermont

44th Biennial Report
of the
Vermont Department of Agriculture
1987 and 1988

Ronald A. Allbee, Commissioner

Dear Vermonter,

Vermont agriculture faced many changes during the 1987-88 biennium, changes that were sometimes bitter and difficult, sometimes encouraging and exciting. Vermont farmers and citizens, and the Department of Agriculture rose to the challenge of shaping a new vision of agriculture in this state and working to achieve it.

Dairy farmers suffered the lowest milk prices of the decade, and the number of dairy farmers continued to decline, exacerbated by the federal government's Dairy Termination Program. All farmers paid increasingly higher property taxes and higher production costs.

However, the 1988 Vermont Legislature, supported by Vermont's citizens, adopted several measures to ease their financial burdens. They included the Dairy Industry Income Stabilization Program, the Working Farm Tax Abatement Program, the Family Farm Debt Stabilization Program and expansion of the Housing and Conservation Fund for the purchase of farmland development rights.

Meanwhile, Vermont farmers diversified, entering such areas as nursery and greenhouse, fish farming, organic fruits and vegetables, beef, pork, lamb, and other kinds of farming.

During the biennium, the Department of Agriculture participated in many of the changes and changed itself -- computerizing, beginning a Pesticide Monitoring Program and an Integrated Pest Management Program for nurseries, expanding laboratory work, working harder to promote Vermont agricultural products. Department staff have worked with dedication and creativity to meet the challenges of today and the future.

Ronald A. Allbee
Commissioner of Agriculture

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Animal and Dairy Industry Division

Dairy Section

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The dairy industry in Vermont has, during the past year, experienced a greater than usual loss of dairy farms. During 1988, 7 percent of our dairy farmers discontinued operation. This loss of dairy farms, coupled with the loss of dairy farms during the 1986-1987 dairy whole-herd buyout, has resulted in a deficit market throughout the New England marketing area. Cheese manufacturing plants throughout Vermont have experienced the effects of a short milk supply.

During the past two years, the Dairy Division has administered the Vermont Dairy Industry Income Stabilization program for subsidizing dairy farms. Applications were received from 2,245 Vermont dairy farms. Verification of responses on application regarding farm income criteria was conducted by reviewing IRS tax returns on a random sampling of 10 percent of the applicants. There were 2,072 dairy farms who received the first payment in July 1988 for an estimated amount of milk production at $.50 per cwt. which totaled $3,791,567.87.

One qualifying criterion was membership in the Regional Cooperative Marketing Association. Some dairy farmers who are opposed to joining RCMA have filed suit against the State because they weren't eligible.

During the past year, our dairy inspection program was reorganized. Two inspector positions' responsibilities were changed to use them for plant inspection specialization. This was done to enable necessary training to keep up with the technological changes in our dairy processing plants. The remaining inspectors will concentrate on farm inspection and related work.

Total Number of Dairy Farms By County for 1986 and 1987

	1986	1987
ADDISON	515	419
BENNINGTON	53	58
CALEDONIA	220	200
CHITTENDEN	194	152
ESSEX	43	39
FRANKLIN	606	568
GRAND ISLE	58	57
LAMOILLE	115	101
ORANGE	272	238
ORLEANS	405	436
RUTLAND	252	223
WASHINGTON	120	111
WINDHAM	68	62
WINDSOR	142	107
TOTALS	3,063	2,771

SEAL OF QUALITY
Vermont
DEPARTMENT OF AGRICULTURE

1986 Summary of Vermont Distribution of Product

	Pounds
Fluid Milk Shipped	1,094,413,290
Fluid Milk Made into Cheddar Cheese	268,012,919
Fluid Milk Made into Foreign Type Cheese	311,156,786
Fluid Milk Made into Bakers/Pot Type Cheese	119,060,417
Fluid Milk Made into Ice Cream & Ice Cream Mix	454,549
Fluid Milk Sold Locally	84,704,020
Sweet Cream Shipped	40,059,208
Sweet Cream Made into Butter	2,228,369

1986 Fluid Milk Received in Plants and Percentage Shipped

County	Pounds Received	Pounds Shipped	Percent Shipped
Addison	329,992,635	2,832,556	0.85
Bennington	88,205,827	66,758,236	75.68
Caledonia	108,542,566	82,586,323	76.08
Chittenden	196,460,361	2,761,675	1.40
Franklin	490,877,128	147,742,431	30.09
Lamoille	7,200	0	0.00
Orange	86,487,194	84,588,037	97.80
Orleans	480,037,221	332,815,464	69.33
Rutland	166,652,255	117,630,974	70.58
Washington	187,441,983	66,577,252	35.51
Windham	104,728	0	0.00
Windsor	55,342,222	190,120,342	--
Total	2,190,151,320	1,094,413,290	49.96

1987 Summary of Vermont Dairy Statistics Showing Distribution of Product

	Pounds
Fluid Milk Shipped	1,173,763,271
Fluid Milk Made into Cheddar Cheese	307,102,684
Fluid Milk Made into Foreign Type Cheese	659,746,525
Fluid Milk Made into Bakers/Pot Type Cheese	5,071,496
Fluid Milk Sold Locally	79,561,316
Sweet Cream Shipped	32,948,766
Sweet Cream Made into Butter	1,624,427
Sweet Cream Sold Locally	10,625,430
Skim Shipped	73,911,965
Skim Made into Cottage and Soft Cheese	16,868,126
Skim Sold	9,151,881
Low Fat Milk Sold Locally	38,559,427

1986 Receipts of Milk by Counties Showing Average Prices and Values

County	Patrons	Pounds	$/cwt	$
Addison	322	329,992,635	12.43	41,030,696
Bennington	107	88,205,827	13.10	11,562,334
Caledonia	206	108,542,566	12.32	13,376,389
Chittenden	305	196,460,361	12.65	24,860,980
Franklin	525	490,877,128	12.57	61,714,670
Lamoille	0	7,200	14.00	1,008
Orange	143	86,487,194	13.11	11,341,773
Orleans	523	480,037,221	13.11	62,954,288
Rutland	161	166,652,255	13.13	21,898,009
Washington	270	187,441,983	13.68	25,642,602
Windham	1	104,728	12.50	13,093
Windsor	62	55,342,222	13.17	7,290,578
Total	2,629	2,190,151,320	12.86	281,686,420

1987 Receipts of Milk by Counties Showing Average Prices and Values

County	Patrons	Pounds	$/cwt	$
Addison	245	282,855,313	13.20	37,364,575
Bennington	99	85,930,712	13.37	11,494,229
Caledonia	475	321,343,458	13.23	42,519,971
Chittenden	327	208,451,281	12.93	26,964,025
Franklin	571	572,250,442	12.72	72,841,110
Lamoille	1	42,942	14.98	6,436
Orange	164	111,592,968	13.61	15,191,698
Orleans	469	456,430,557	13.33	60,851,639
Rutland	109	152,706,014	13.38	20,437,493
Washington	25	26,718,268	13.55	3,620,936
Windham	1	177,706	12.97	23,049
Windsor	105	90,106,495	12.96	11,684,466
Total	2,595	2,308,606,156	13.12	302,999,627

1986 Receipts of Milk Showing Average Prices and Values
(*Monthly Average)

County: Addison

Month	Patrons	Pounds	$/cwt	$
January	351	31,758,287	12.32	3,914,538
February	351	28,650,361	12.17	3,489,568
March	349	31,419,022	11.86	3,726,454
April	346	29,878,953	11.69	3,494,057
May	331	29,357,821	11.70	3,437,734
June	319	26,008,275	11.64	3,029,792
July	315	24,969,630	12.29	3,069,517
August	309	24,648,063	12.85	3,167,556
September	306	24,817,493	13.13	3,260,618
October	304	25,990,787	13.38	3,478,690
November	298	25,325,129	13.37	3,387,406
December	294	27,168,814	13.15	3,574,766
Total	322*	329,992,635	12.43	41,030,696

County: Bennington

Month	Patrons	Pounds	$/cwt	$
January	112	8,283,791	12.95	1,073,321
February	112	7,339,508	12.85	943,835
March	112	8,075,457	12.56	1,014,934
April	113	7,720,734	12.39	956,751
May	110	7,954,395	12.36	983,199
June	106	6,909,690	12.28	848,623
July	105	6,513,524	12.91	840,959
August	104	6,637,259	13.45	893,037
September	104	6,777,249	13.75	932,476
October	104	7,218,718	14.04	1,013,598
November	104	7,122,861	14.07	1,002,203
December	104	7,652,641	13.84	1,059,398
Total	107*	88,205,827	13.10	11,562,334

County: Caledonia

Month	Patrons	Pounds	$/cwt	$
January	204	9,793,862	10.54	1,032,707
February	203	8,863,707	12.50	1,107,963
March	201	9,862,139	12.50	1,232,767
April	201	9,428,861	12.50	1,178,607
May	194	9,371,830	12.50	1,171,478
June	190	8,468,961	12.50	1,058,620
July	196	7,998,552	12.50	999,918
August	196	8,339,268	12.50	1,042,408
September	296	8,581,689	12.50	1,072,711
October	198	8,999,255	12.50	1,124,906
November	201	8,921,347	12.50	1,115,168
December	200	9,913,095	12.50	1,239,136
Total	206*	108,542,566	12.32	13,376,389

County: Chittenden

Month	Patrons	Pounds	$/cwt	$
January	313	16,187,662	12.61	2,041,947
February	312	14,656,791	12.55	1,839,424
March	314	16,740,250	12.23	2,048,108
April	314	17,131,598	11.55	1,980,120
May	305	18,185,802	11.83	2,151,681
June	308	17,513,117	11.64	2,038,955
July	301	16,507,126	12.35	2,039,720
August	303	16,908,057	12.45	2,106,467
September	301	15,884,181	13.47	2,140,858
October	301	16,077,957	13.89	2,234,054
November	299	14,917,801	14.01	2,090,998
December	298	15,750,019	13.64	2,148,648
Total	305*	196,460,361	12.65	24,860,980

County: Franklin

Month	Patrons	Pounds	$/cwt	$
January	539	41,201,808	12.44	5,126,152
February	539	37,362,268	12.31	4,601,230
March	538	42,482,173	12.00	5,101,400
April	538	42,080,575	11.78	4,960,320
May	531	44,599,694	11.77	5,252,722
June	527	42,109,458	11.53	4,856,655
July	525	41,685,371	12.12	5,056,405
August	517	41,341,830	12.70	5,251,558
September	511	39,887,880	13.15	5,245,343
October	509	39,996,778	13.74	5,495,570
November	513	37,964,650	13.93	5,290,888
December	514	40,164,643	13.63	5,476,427
Total	525*	490,877,128	12.57	61,714,670

County: Lamoille

Month	Patrons	Pounds	$/cwt	$
October	1	1,600	14.00	224
November	1	2,400	14.00	336
December	1	3,200	14.00	448
Total	0*	7,200	14.00	1,008

County: Orange

Month	Patrons	Pounds	$/cwt	$
January	149	7,765,576	12.98	1,007,971
February	147	7,025,820	12.80	899,304
March	146	7,703,516	12.58	969,102
April	145	7,278,789	12.41	903,297
May	138	7,627,816	12.39	945,086
June	135	6,966,080	12.33	858,917
July	133	6,613,605	12.97	857,784
August	130	6,601,119	13.52	892,471
September	128	6,646,921	13.80	917,275
October	220	8,817,335	13.83	1,220,057
November	125	6,508,729	14.02	912,523
December	123	6,931,888	13.82	957,986
Total	143*	86,487,194	13.11	11,341,773

County: Orleans

Month	Patrons	Pounds	$/cwt	$
January	537	41,489,360	12.98	5,387,809
February	535	36,915,993	12.88	4,755,163
March	533	41,500,858	12.58	5,224,597
April	540	41,226,618	12.28	5,065,390
May	535	43,748,793	12.32	5,391,640
June	525	41,000,389	12.17	4,990,370
July	517	40,033,867	12.79	5,122,638
August	515	40,009,141	13.31	5,326,349
September	510	39,226,965	13.79	5,409,653
October	508	38,969,882	14.22	5,542,561
November	514	36,968,054	14.29	5,282,947
December	511	38,947,301	14.00	5,455,171
Total	523*	480,037,221	13.11	62,954,288

County: Rutland

Month	Patrons	Pounds	$/cwt	$
January	293	14,823,474	13.06	1,936,910
February	157	13,431,461	12.77	1,715,359
March	155	14,778,646	12.42	1,836,170
April	156	14,224,913	12.37	1,760,776
May	162	15,436,058	12.27	1,895,514
June	117	10,495,637	12.27	1,288,465
July	154	13,298,220	12.72	1,692,579
August	154	13,390,052	12.97	1,737,679
September	152	13,358,871	13.77	1,840,381
October	150	14,458,001	14.22	2,056,399
November	146	14,111,814	14.43	2,036,604
December	142	14,845,108	14.15	2,101,173
Total	161*	166,652,255	13.13	21,898,009

County: Washington

Month	Patrons	Pounds	$/cwt	$
January	279	16,237,479	13.02	2,114,506
February	278	14,477,217	12.83	1,858,169
March	276	15,761,364	12.63	1,991,822
April	272	15,725,393	12.30	1,934,793
May	274	16,640,995	12.36	2,057,969
June	249	13,723,678	12.07	1,657,682
July	272	15,282,563	12.66	1,935,407
August	272	15,766,574	13.22	2,085,625
September	269	15,796,601	13.69	2,163,638
October	269	16,219,183	14.27	2,315,488
November	270	15,646,051	14.24	2,229,193
December	267	16,164,885	20.40	3,298,310
Total	270*	187,441,983	13.68	25,642,602

County: Windham

Month	Patrons	Pounds	$/cwt	$
January	1	2,249	12.49	281
February	1	2,088	12.50	261
March	1	3,004	12.51	376
April	1	3,104	12.50	388
May	1	3,877	12.50	485
June	1	11,705	12.49	1,463
July	1	15,636	12.50	1,955
August	1	13,405	12.50	1,676
September	1	11,910	12.50	1,489
October	1	12,350	12.50	1,544
November	1	12,350	12.50	1,544
December	1	13,050	12.49	1,631
Total	1*	104,728	12.50	13,093

County: Windsor

Month	Patrons	Pounds	$/cwt	$
January	65	5,587,812	13.01	727,521
February	65	5,001,904	12.90	645,515
March	66	5,334,372	12.58	671,388
April	65	5,023,225	12.43	624,408
May	63	5,044,133	12.44	627,715
June	64	4,386,504	12.31	540,008
July	62	4,156,700	12.96	538,795
August	66	4,173,478	13.79	575,900
September	61	4,260,675	13.90	592,281
October	60	4,542,587	14.21	645,938
November	58	4,042,428	14.16	572,639
December	51	3,788,404	13.94	528,470
Total	62*	55,342,222	13.17	7,290,578

1987 Receipts of Milk Showing Average Prices and Values
(Monthly Average)

County: Addison

Month	Patrons	Pounds	$/cwt	$
January	259	25,895,124	13.92	3,606,338
February	257	23,324,119	13.66	3,186,304
March	253	25,785,494	13.10	3,380,239
April	255	24,706,731	12.66	3,129,771
May	251	25,287,298	12.16	3,075,209
June	251	23,184,514	12.10	2,807,387
July	250	22,433,159	12.76	2,864,419
August	236	21,746,518	13.23	2,878,981
September	234	21,409,554	13.73	2,941,501
October	235	22,564,505	14.01	3,163,045
November	230	22,466,526	13.89	3,121,382
December	229	24,051,771	13.34	3,209,999
Total	245*	282,855,313	13.20	37,364,575

County: Bennington

Month	Patrons	Pounds	$/cwt	$
January	105	7,882,173	13.94	1,099,315
February	104	7,062,571	13.73	969,773
March	104	7,762,827	13.26	1,029,772
April	104	7,510,238	13.02	978,241
May	101	7,733,169	12.55	970,924
June	100	6,991,412	12.51	875,075
July	99	6,647,973	13.00	864,593
August	99	6,775,396	13.37	906,460
September	96	6,638,299	13.82	917,786
October	95	6,841,418	14.03	960,080
November	95	6,808,102	13.85	943,477
December	95	7,277,134	13.44	978,733
Total	99*	85,930,712	13.37	11,494,229

County: Caledonia

Month	Patrons	Pounds	$/cwt	$
January	483	26,852,629	14.09	3,784,129
February	482	24,266,528	13.71	3,328,499
March	481	27,382,314	13.18	3,611,198
April	478	26,597,988	12.71	3,383,067
May	474	28,375,364	12.43	3,529,586
June	476	26,884,926	12.30	3,308,050
July	476	26,080,721	12.71	3,317,381
August	480	26,656,692	13.16	3,509,085
September	476	26,342,418	13.67	3,603,222
October	470	27,275,273	13.83	3,774,182
November	466	26,532,347	13.64	3,621,495
December	467	28,096,258	13.34	3,750,077
Total	475*	321,343,458	13.23	42,519,971

County: Chittenden

Month	Patrons	Pounds	$/cwt	$
January	289	16,053,723	13.65	2,192,483
February	289	14,795,480	13.39	1,981,829
March	288	17,229,474	12.85	2,214,594
April	293	17,613,455	12.34	2,173,689
May	590	19,065,215	11.97	2,283,639
June	288	18,104,257	11.88	2,152,125
July	316	18,292,009	12.44	2,277,232
August	314	18,033,074	12.84	2,316,559
September	314	17,229,622	13.56	2,336,460
October	318	17,587,994	13.75	2,419,644
November	318	16,750,960	13.65	2,286,789
December	317	17,696,018	13.16	2,328,982
Total	327*	208,451,281	12.93	26,964,025

County: Franklin

Month	Patrons	Pounds	$/cwt	$
January	575	46,445,210	13.48	6,265,037
February	574	41,881,551	13.17	5,516,643
March	570	47,839,311	12.68	6,068,633
April	573	47,945,743	12.20	5,853,215
May	572	51,612,712	11.82	6,101,041
June	573	48,978,153	11.71	5,736,757
July	572	47,317,186	12.25	5,800,174
August	575	49,123,465	12.66	6,220,790
September	571	47,611,566	13.16	6,269,814
October	567	48,170,525	13.44	6,475,898
November	569	46,130,530	13.37	6,169,347
December	566	49,194,490	12.93	6,363,761
Total	571*	572,250,442	12.72	72,841,110

County: Lamoille

Month	Patrons	Pounds	$/cwt	$
January	1	2,735	14.99	410
February	1	2,688	14.99	403
March	1	2,988	14.95	447
April	1	2,846	14.96	426
May	1	3,182	14.99	477
June	1	3,468	14.99	520
July	1	4,584	14.98	687
August	1	4,487	14.99	673
September	1	3,507	14.99	526
October	1	4,418	14.98	662
November	1	4,158	14.98	623
December	1	3,881	14.99	582
Total	1*	42,942	14.98	6,436

County: Orange

Month	Patrons	Pounds	$/cwt	$
January	176	10,560,260	14.18	1,497,937
February	176	9,479,419	13.97	1,324,685
March	174	10,500,891	13.61	1,429,546
April	175	10,174,616	13.29	1,352,899
May	177	10,731,396	12.97	1,392,765
June	175	9,716,115	12.94	1,257,822
July	172	8,927,334	13.34	1,191,268
August	152	8,176,432	13.60	1,112,750
September	150	8,125,038	13.88	1,128,103
October	148	8,466,608	14.05	1,190,083
November	147	8,150,157	14.00	1,141,256
December	147	8,584,702	13.65	1,172,584
Total	164*	111,592,968	13.61	15,191,698

County: Orleans

Month	Patrons	Pounds	$/cwt	$
January	480	38,699,229	14.00	5,420,965
February	481	34,940,026	13.77	4,812,637
March	483	39,849,659	13.27	5,289,063
April	479	39,647,992	12.82	5,085,252
May	473	42,174,343	12.42	5,239,950
June	475	40,044,927	12.34	4,945,017
July	484	38,483,759	13.02	5,011,653
August	460	38,352,705	13.48	5,170,422
September	459	36,607,107	13.72	5,024,788
October	465	37,164,762	14.03	5,215,736
November	449	34,188,977	13.92	4,759,685
December	450	36,277,071	13.44	4,876,471
Total	469*	456,430,557	13.33	60,851,639

County: Rutland

Month	Patrons	Pounds	$/cwt	$
January	110	13,139,521	14.14	1,859,168
February	109	11,773,482	14.00	1,648,319
March	107	13,150,693	13.30	1,749,731
April	107	12,778,780	12.80	1,636,024
May	108	13,296,724	12.46	1,656,874
June	105	12,278,308	12.31	1,511,975
July	107	11,834,738	12.95	1,533,763
August	108	12,481,592	13.38	1,670,733
September	108	11,987,279	13.87	1,663,313
October	103	12,389,720	13.84	1,715,721
November	118	13,271,105	13.89	1,843,586
December	118	14,324,072	13.60	1,948,286
Total	109*	152,706,014	13.38	20,437,493

County: Washington

Month	Patrons	Pounds	$/cwt	$
January	25	2,339,593	14.18	331,924
February	25	2,100,935	13.78	289,531
March	25	2,261,969	13.14	297,236
April	25	2,152,399	12.67	272,803
May	25	2,208,470	12.40	274,016
June	25	2,123,873	12.38	263,060
July	25	1,985,380	13.10	260,214
August	25	2,097,295	13.59	285,069
September	26	2,157,479	13.99	301,895
October	26	2,412,741	14.17	341,992
November	26	2,369,524	14.67	347,637
December	26	2,508,610	14.17	355,559
Total	25*	26,718,268	13.55	3,620,936

County: Windham

Month	Patrons	Pounds	$/cwt	$
January	0		0	0.000
February	1	9,580	13.02	1,248
March	1	10,745	12.94	1,391
April	1	13,189	12.91	1,703
May	1	13,550	12.95	1,755
June	1	4,534	12.90	585
July	2	21,782	12.95	2,821
August	2	27,609	12.99	3,588
September	2	16,437	12.97	2,132
October	2	27,007	12.99	3,510
November	2	20,648	12.96	2,678
December	1	12,625	12.97	1,638
Total	1*	177,706	12.97	23,049

County: Windsor

Month	Patrons	Pounds	$/cwt	$
January	112	8,609,823	13.14	1,131,940
February	112	7,728,399	13.08	1,010,876
March	111	8,502,496	13.03	1,108,435
April	111	7,861,957	12.96	1,019,114
May	109	8,105,758	12.87	1,043,836
June	108	7,467,230	12.80	956,331
July	102	6,717,539	12.87	865,127
August	103	6,891,040	13.00	895,985
September	101	6,835,505	12.97	886,792
October	99	7,221,944	12.92	933,174
November	97	6,840,292	12.93	885,053
December	96	7,324,512	12.94	947,803
Total	105*	90,106,495	12.96	11,684,466

Vermont Dairy Industry Council

The Vermont Dairy Industry Council (VDIC) administers the promotion assessment on milk produced in the State of Vermont and sold out of state. The funds are used for advertising, promotion, research and administrative costs for the distribution of these functions in the dairy field. The bulk of these funds is allotted to Milk Promotion Services,Inc. with other, smaller allocations to the Vermont Milk Flavor Program and Green Mountain Dairy Promotion, Inc.

The VDIC Futuristic Marketing Committee, which financially assisted the Dairy Research Center at the University of Vermont, was pleased when notified that UVM and Cornell University would share in a grant from the National Dairy Promotion Board for their dairy research center.

Contract No. 60 Montpelier, Vermont
December 23, 1986
AGREEMENT:
VERMONT DAIRY INDUSTRY COUNCIL, and
THE UNIVERSITY OF VERMONT, DEPARTMENT OF ANIMAL SCIENCE

For the purpose of promoting their mutual interest ofincreasing the consumption of dairy products, the Vermont Dairy Industry Council, Agriculture Building, Montpelier, Vermont, hereinafter known as the Council and the University of Vermont, College of Agriculture, Carrigan Hall, Burlington, Vermont, hereinafter known as UVM hereby contract and agree as follows:

1.UVM agrees to conduct the Quality Milk Research Program for mastitis control for the Vermont Dairy Industry.

2.UVM agrees to purchase a Microcomputer with fixed disk system and printer to interface with Foss-90, Somatic Cell Counter.

3.UVM agrees to provide funding for the Microcomputer and Printer in an amount at least equal to the amount provided by the Vermont Dairy Industry Council per this contract.

4.Council agrees to pay UVM as soon as feasible after January 1, 1986, the sum of $2,850.00 to allow UVM to carry out its obligations under this agreement.

5.The total liability of the Council under this agreement shall not exceed $2,850.00.

6.This agreement is effective January 1, 1986, and shall terminate December 31, 1986.

VERMONT DAIRY INDUSTRY COUNCIL
By_____
Paul A. Stone, Chairman

UNIVERSITY OF VERMONT, COLLEGE OF AGRICULTURE
By_____
Leonard Bull, Chairman

State Dairy Council

The State Dairy Council (SDC) administers the milk promotion assessment imposed on processors and dealers on all milk sold for consumption in the State of Vermont and the license fees collected by the Vermont Milk Control Board. The bulk of the funds are allocated to Dairy Council of Vermont, with other smaller allocations to the Vermont MILK Flavor Program, Green Mountain Dairy Promotion, Inc., and a brand advertising program designed to help local dairy plants in promotion their own brand products.

The SDC meets jointly several times throughout the year in conjunction with the Vermont Dairy Industry Council (VDIC - out of state milk promotion programs) as most of the promotional efforts of the contracting agencies involve similar activities.

At the last meeting of the SDC, it was announced that the Dairy Council of Vermont would probably merge with the New England Dairy and Food Council. It was suggested that the SDC may respond by submitting a proposed statute change to merge the SDC with the VDIC.

State Dairy Council and Vermont Milk Control Board
Statement

	FY87	FY88
Balance Brought Forward	$ 13,402.49	$ 20,991.17
Assessment Receipts	155,132.39	178,435.67
Milk Control Board License Fees	4,736.00	4,652.00
Balance Available	$173,270.88	$204,078.84
Administrative Costs:		
Board Members Salaries	$890.00	$1,050.00
Administration and Clerical Salaries	5,076.48	5,419.64
Fringe Benefits	949.81	1,150.16
Postage	232.76	322.74
Printing	89.80	4.80
Board Members & Administrative Expenses	735.65	780.47
Newspaper & Radio Advertising	207.51	$0.00
Total Administrative Costs	$7,974.50	$8,935.32
Allocations:		
Milk Quality Enhancement	$1,000.00	$0.00
Dairy Council of Vermont	101,000.02	103,500.00
Milk Promotion Services, Inc.	20,630.77	48,577.48
Dairy Market Development Program	7,500.00	8,562.00
Green Mountain Dairy Promotion	2,750.00	3,000.00

Payments to Brand Advertising Committees	11,424.42	10,949.00
Total Allocations	$144,305.21	$174,588.48
Total Expenditures	$152,279.71	$183,523.80
Balance Forward	$ 20,991.17	$ 20,555.04

Vermont Dairy Industry Council Statement

	FY87	FY88
Receipts	$1,783,051.59	$2,305,214.86
Expenditures		
Adminstrative Costs		
Board Members Salaries	1,080.00	1,050.00
Administrative and Clerical Salaries	5,590.24	5,980.76
Fringe Benefits	1,045.93	1,172.02
Board Members & Administrative Expenses	899.50	857.19
Printing	64.80	8.00
	$8,680.47	$9,067.97
Advertising Contracts & Agreements		
Univers. of Vt. Equip. UF Unit	$9,075.00	$-0-
Univers. of Vt. Research-Super Premium Yogurt	45,000.00	-0-
Univers. of Vt. Pilot Scale Equip. Dairy Prod. Ctr.	-0-	100,000.00
Milk Promotion Services, Inc.	1,672,171.12	2,161,958.89
Dairy Mkt. Development Program	31,625.00	27,238.00
Green Mt. Dairy Promotion	7,500.00	8,000.00
Milk Quality Enhancement Program	9,000.00	-0-
Wood Art Gallery	-0-	500.00
	$1,774,371.12	$2,297,696.89

Livestock Section

Christie, Marilyn J.	Secretary C
Gladden, Kathryn A.	Typist B
Hafner, David J.	Agricultural Inspector
Kuehne, Darryl	Agricultural Inspector
Lawson, Stephanie J.	Clerk B
Urie, Phil A.	Agricultural Inspector
Walker, D.V.M., David	State Veterinarian

United States Department of Agriculture
Animal & Plant Health Inspection Service

Campbell, Kimberley	Program Records Clerk
Chicoine, Stephen	Livestock Technician
Zeilenga, D.V.M., Wayne	Veterinarian-in-Charge

Legislative action has delegated the authority and responsibility to the Livestock Section for implementing the following programs:

1. Enforcement of regulations regarding the health of animals and poultry imported from other states and countries in order to protect the animal and human population of Vermont from infectious and contagious diseases.

2. Eradication of bovine tuberculosis by area testing of cattle and by supervising tests for herd accreditation and interstate shipment of cattle and milk.

3. Eradication of brucellosis.

4. Eradication of hog cholera.

5. Control and eradication of miscellaneous infectious and contagious diseases of livestock and poultry.

6. Licensing, bonding and supervision of livestock dealers and commission sales.

7. Licensing and bonding of live poultry dealers.

8. Licensing and inspection of garbage feeding to swine.

9. Regulation of importation and sale of psittacine birds.

10. Disinfection service.

11. Rabies control.

12. Animal Welfare Act.

13. Horse pulling.

14. Livestock branding.

General administration direction for the livestock disease control/diagnostic programs falls under the Director of Animal and Dairy Industries, except for the serology laboratory, which is under the authority of the Director of Plant Industry, Laboratories and Standards.

Most livestock disease programs are cooperatively conducted with the United States Department of Agriculture, Animal & Plant Health Inspection Service. Historically, memoranda of agreement have called for roughly equal participation between the state and federal governments in funding, equipment and personnel. However, over the past several years USDA-APHIS has decreased participation. It appears inevitable that the state will have to continue to increase its responsibility and program scope to maintain present program levels. The magnitude of federal budget cuts and proposed cuts is more far reaching and severe than expected.

Animal health programs are primarily continuing surveillance to maintain population overview and pinpoint areas of major risk. Cooperative programs of this nature have, over the years, demonstrated outstanding success in detecting the index herd or flock in an initial disease outbreak. When such programs are properly staffed and adequately funded they will provide the safest, most cost-effective and dependable form of preventive medicine.

Reduced services by the Diagnostic Laboratory, Department of Animal Sciences, University of Vermont, will pose cost and technical problems for this department and industry alike. Industry has been dependent for disease diagnostics on out-of-state laboratories.

Brucellosis

Vermont has been designated free of brucellosis since July of 1982. Any state qualifying for this designation must have been free of disease in all species for the preceding year as verified by a continuing series of surveillance testing. No field strain infection has been disclosed through testing and surveillance programs since that time.

Stringently applied surveillance procedures are a necessity for the foreseeable future to ensure that the disease, if inadvertently imported, is confined to index herds as rapidly as possible. Occasional outbreaks must be anticipated while the disease is present in the United States. The explosiveness with which brucellosis spreads in cattle populations makes it the most dangerous disease of cattle in the country.

Brucellosis infection in humans is referred to as undulant fever and is a severely debilitating disease.

The department has a regulation requiring negative testing before transfer of ownership. There has been renewed interest from a broad constituency of agricultural industry to repeal this regulation, which requires a negative test for transfer of ownership of cattle intrastate.

Repeal of this regulation would not affect interstate test requirements for cattle imported into Vermont, which require quarantine and retest in 45-120 days after entry.

Bovine Tuberculosis

This state has been designated free of bovine tuberculosis since May of 1979. A legislatively mandated surveillance program has been in effect for many years. One-fourth of the herds in each county are tested annually on a three-year rotating basis. In addition, the laws of the State of Connecticut require that all milk entering its market originate from herds tested negative every three years for tuberculosis

Bovine tuberculosis outbreaks in the United States generally result from international cattle movements due to extreme latency of the disease. Tracing infection to its source is extremely expensive, often involving several states. Tuberculosis testing in Vermont has been done on fee basis, with practicing veterinarians contracting to do the work.

Equine Infectious Anemia

Legislation passed in 1986 requires that horses test negative for equine infectious anemia before transfer of ownership. This legislation was introduced and supported by the horse industry. Regulations have been promulgated for testing, quarantine and identification of reactors, isolation procedures and testing of exposed animals.

The following tables detail this section's disease testing activities:

Brucellosis Blood Tests, Vaccinations

	No.Herds Tested	No.Animals Tested	No. Calf Vaccinations
7/1/86-6/30/87	4,101	30,996 (148-S)	16,799
7/1/87-6/30/88	3,366	28,770 (32-S)	17,779

Blood Testing - Goats

	No.Herds Testing	No. Animals Tested
7/1/87-6/30/88	7	78 (3-S)

Milk Ring Tests

	No.Calls Made	No. Samples Negative	No.Samples Suspicious
7/1/86-6/30/87	286	20,694	23
7/1/87-6/30/88	219	15,008	6

Tuberculosis Area Testing

	No.Herds Tested	No.Cattle Tested	Number Suspects
7/1/86-6/30/87	700	40,441	42
7/1/87-6/30/88	933	53,259	93

Private Tuberculosis Testing

	No.Herds Tested	No.Cattle Tested	Number Suspects
7/1/86-6/30/87	1,444	16,904	4
7/1/87-6/30/88	1,311	14,221	27

Connecticut Milk Market Testing

	No.Herds Tested	No.Cattle Tested	Number Suspects
7/1/86-6/30/87	1,295	59,933	101
7/1/87-6/30/88	231	14,265	15

Tuberculosis Testing of Goats - Private

	No.Herds Tested	No.Goats Tested	Number Suspects
7/1/86-6/30/87	21	166	-
7/1/87-6/30/88	20	148	-

Tuberculosis Testing of Goats - Area

	No.Herds Tested	No.Goats Tested	Number Suspects
7/1/86-6/30/87	2	25	-
7/1/87-6/30/88	6	65	-

Summary of Garbage Feeding Licenses

	Number Cooking Permits Issued	No. Hogs Fed Garbage
7/1/86-6/30/87	2	190
7/1/87-6/30/88	2	111

Cattle Imported

	From Canada	From Other States	Releases Issued
7/1/86-6/30/87	3,409	4,177	1,199
7/1/87-6/30/88	2,863	3,852	1,009

Cattle Exported - Other States and International

7/1/86-6/30/87	4,935
7/1/87-6/30/88	8,981

Commission Sales Report

	Slaughter Cattle	Dairy Cattle	Calves Sold	Amount of Sales
7/1/86-6/30/87	26,029	737	45,645	$12,310,722.47
7/1/87-6/30/88	20,552	564	47,589	$14,994,568,98

	Unclassified	Horses
7/1/86-6/30/87	4,640	466
7/1/87-7/1/88	7,935	460

Livestock Dealers

	1986-1987	1987-1988
Resident and Non-Resident Dealers	92	99
Commission Sales	7	5
Total Licenses Issued	**99**	**104**

Swine Blood Tested

1986-1987	1054
1987-1988	1858

Backtags Applied

1986-1987	22,780
1987-1988	19,954

Darryl Kuehne, livestock inspector

Meat Inspection Section

Russell W. Laslocky, D.V.M. Head of Service
Carl W. Cushing Inspector Supervisor
Bruce M. Farnham Compliance Officer
Monique T. Washburn Secretary
Meat Inspectors:

Robert Aprilliano
Victor Dunbar
Edward Jackson
Frank Leavitt
Hugh Lund
Stanley Marshia
Michael Mitchell
Bayard Mousley
Randy Quenneville
Sherry Sawyer
Curtis Stasheski

Vermont continues to operate an effective, efficient Meat Inspection program. Half of the state program, the only one in the Northeast, is funded by the federal government. The State Meat Inspection Service provides 1) ante-mortem, post-mortem and processing inspection for any meats offered for sale within the state (other than federally inspected products), 2) surveillance and inspection of all custom slaughter and processing establishments to maintain sanitary requirements and assure that meat products from such establishments are not sold commercially, and 3) compliance and evaluation inspection of retail markets to determine that only inspected, wholesome, properly labeled meats, prepared under sanitary conditions, are offered for sale.

Five federal plants within the state are staffed by state personnel under the cross utilization agreement. The entire cost of the inspectors operating in these federal plants is paid by the federal government. This reimbursement reduces the state's share of the Meat Inspection budget, so the taxpayers of Vermont pay only about 35 percent of the total Meat Inspection budget.

These are only examples of the effort to cooperate with the federal inspection program. That has been very beneficial to both services. There is now an interchange of inspectors both routinely and in emergencies that makes staffing of both federal and state plants more efficient.

Because of the cooperation, state inspectors must be certified to perform federal tasks. All inspectors of the present staff are now federally certified and can operate as federal inspectors.

In addition, the Meat Inspection Program has an inspector trained to perform federal grading and this service is provided to Vermont livestock producers.

Poultry Production - July 1986 - June 1987

10 geese	70 lbs.
40 chickens	700 lbs.
158 ducks	671 lbs.
170 capons	1,530 lbs.
4,004 turkeys	87,580 lbs.

Poultry Condemnations

15 capons	120 lbs.
capon parts	10 lbs.
1 duck	4 lbs.
12 turkeys	248 lbs.
turkey parts	136 lbs.
Total	518 lbs.

Poultry Production - July 1987 - June 1988

6,274 turkeys	133,176 lbs.
171 cornish hens	428 lbs.

Poultry Condemnations

39 turkeys	741 lbs.
turkey parts	461 lbs.
Cornish hen parts	8 lbs.
Total	1,210 lbs.

Retail C&E Inspection

July 1986 - June 1987 - 1,508
July 1987 - June 1988 - 2,090

Product Condemnation

July 1986 - June 1987
Retail - 1,062 lbs.
Processing - 847 lbs.

July 1987 - June 1988
Retail - 1,998 lbs.
Processing - 218 lbs.

Commercial Slaughter Condemnations
July 1986 - June 1987:
Total pounds condemned - Est. weight
12,080 lbs. (21 carcasses - 197 parts - 511 livers)

Commercial Slaughter Condemnations
July 1987 - June 1988 :
Total pounds condemned - Est. weight:11,128 lbs. (14 carcasses - 242 parts - 561 livers)

Licensed Establishments	1987	1988
Retail Markets	1225	1190
Commercial Slaughterhouses	18	18
Custom Slaughterhouses	3	1
Commercial Poultry Slaughterhouses	2	2
Custom Poultry Slaughterhouses	3	3
Commercial Processors	29	31
Custom Processors	19	11
Wholesalers	51	59
Renderers	6	6
Animal Food Manufacturer	1	1
4-D Handlers	6	6

Commercial Slaughter - July 1986 - June 1987

Species	No. Head	Pounds
Cattle	2,353	1,235,489
Swine	1,790	349,790
Sheep	1,894	85,736
Calves	215	35,994
Goats	37	953

Commercial Slaughter - July 1987 - June 1988

Species	No. Head	Pounds
Cattle	1,805	976,690
Swine	1,819	346,750
Sheep	1,681	77,960
Calves	133	22,642
Goats	18	687

Custom Slaughter - July 1986 - June 1987

Species	No. Head	Pounds
Cattle	118	59,126
Swine	63	13,475
Sheep	64	4,016
Calves	9	1,236
Goats	9	311

Custom Slaughter - July 1987 - June 1988

Species	No. Head	Pounds
Cattle	94	46,014
Swine	72	15,790
Sheep	42	2,082
Calves	6	1,044
Goats	11	491

Total Production - July 1986 - June 1987: 1,609,937 lbs.

Total Production - July 1987 - June 1988: 1,426,729 lbs.

Compliance Report

July 1, 1986 - June 30, 1987

Random Reviews	573
Planned Compliance Reviews	334
Violations	7
Detentions of Product	22
Evaluation Incidents	14
Consumer Complaints	21
Federal or other State Agency Assists	7
Contacts	1,371
Special Projects (surveillance/investigations)	9

July 1, 1987 - June 30, 1988

Random Reviews	749
Planned Compliance Reviews	298
Violations	25
Detentions of Product	27
Evaluation Incidents	16
Consumer Complaints	14
Federal or other State Agency Assists	12
Contact	1,186
Special projects (surveillance/investigations/ hearings)	7

At the Vermont State Fair

Plant Industry, Laboratory and Standards Division

Plant Industry Section

Benedict, Phil R.	Director
Dorrance, Anne	Plant Pathologist
Turmel, Jon P.	Entomologist
Drutchas, Richard	Apiculturist
Comstock, Jeffrey	Soil Scientist
Troester, Robert	Systems Specialist - hired 11/87–
Downer, John	Systems Specialist - resigned 6/87
Karnatz, Allen	Pesticide Specialist - hired 1/87
Beebe, Michele	Pesticide Specialist - resigned 11/87
Jensen, Richard	Plant Industry Agent
Shaw, Steven	Plant Industry Agent
Squires, Andrew	Plant Industry Agent
Smith, Catherine	Administrative Secretary
Alexander, Donna	Secretary B
Tuller, Rebecca	Secretary B
Marineau, Tamara	Secretary B - resigned 7/88

Pesticide Control

The Vermont Department of Agriculture has the responsibility of insuring that pesticides are properly used and sold throughout the State. The pesticide control program is divided into two major activities and operates in cooperation with the EPA under two separate grants: pesticide certification and pesticide enforcement.

Pesticide Certification:

The Pesticide Certification Grant allows for the certification and licensing of pesticide applicators and dealers. Pesticide users are divided into private and commercial applicators and they must pass a written examination appropriate for their usage of pesticides. Class "A" and "B" pesticide dealers are also required to pass a licensing examination. Applicator certificates are valid for five years and they may be renewed by reexamination or by attending recertification seminars and other continuing education programs. Under the new regulations, effective 1991, certificate renewal requires eight hours of recertification instruction for private applicators and sixteen hours for commercial applicators. Individual commercial application companies must also be licensed. Total pesticide certificates and licenses are as follows:

	1987	1988
Private Applicators	1,484	1,525
Commercial applicators	728	732
Class "A" Dealer	119	123
Class "B" Dealers	223	209

Pesticide Enforcement

The enforcement grant enables the department to enforce the Vermont Regulations for the Control of Pesticides and the federal pesticide law known as the Federal Insecticide Fungicide and Rodenticide Act. Under this program, inspections are conducted to assure the proper use of pesticides. In addition, all complaints and inquiries are investigated to determine if violations have occurred and if so appropriate action is taken. Investigative and inspection accomplishments include:

	1987	1988
Marketplace inspections	135	103
Use/Misuse investigations	96	106

The department's pesticide laboratory, developed under this grant, analyzes samples collected during inspections and investigations. The samples can either be pesticide formulations, dilutions or residue (generally water, soil or vegetation). Formulation samples are analyzed for product quality, dilution samples for label compliance and residue samples for the presence of pesticides. The laboratory has testing standards for 242 different compounds. Laboratory analysis conducted include:

	1987	1988
Formulation samples	144	135
Dilution/Residue samples	151	45

Other activities conducted under this grant include inspections of pesticide dealers, applicators, producing establishments and imports.

All pesticide products sold and used in Vermont must be registered with the Department of Agriculture. Registered pesticides are categorized as Class "A" (Restricted use), Class "B" and Class C. Registration accomplishments include:

	1987	1988
Pesticide products	5175	5797
Pesticide companies	517	518

Administrative penalties were added to the department's enforcement program in 1987. A total of eight (8) administrative penalties were issued during the period 1987-88. Fines collected total $6350.00 for violations

including misapplication of a pesticide, uncertified applicators and unregistered companies.

Summary of Class "A" Pesticides Sold by Vermont Dealers
During the Calendar Years 1986 and 1987

Actual Amount in Pounds

	1986	1987
Aldicarb (Temik)	153	54
Azinphosmethyl (Guthion)	5,746.2	3,013.75
Cadmium	12.6	67.5
Carbofuran (Furadan)	9,895.8	10,234.5
Chlordane	0	0
Chlorpyrifos (Dursban, Lorsban)	1,486.6	1,386
Crotoxyphos (Ciodrin)	11.53	4.1
DDVP (Vapona)	2.76	1.6
Diazinon	594.9	740
Diclobenil (Casoron)	0	16
Dinoseb	279	0
Diquat	22	58
Disulfoton (Di-syston)	1.5	7.5
Endosulfan (Thiodan)	841	185.5
Esfenvalerate (Ambush)	0	1.9
Fenamiphos (Nemacus)	0	40
Fenvalerate (Pydrin)	15.6	12
Fonofos (Dyfonate)	3, 840	2,210
Isofenphos (Oftanol)	0	224.7
Lindane	29.42	34.1
Linuron (Lorox)	0	25
Mesurol	2.44	0
MSR	10	4
Methomyl (Lannate, Nudrin)	257.4	273.6
Oxamyl (Vydate)	294	28.5
Paraquat	352	197.25
Parathion	.3	0
Permethrin (Pounce)	344.2	10.08
Phosphamidon	0	16
Picloram (Tordon)	0	5.8
Prometon	0	2
Propetamphos (Safrotin)	0	2
Terbufos (Counter)	1,282.5	2,970
Vapam	1,012.5	45
Vorlex	7,940	385
Zinc Phosphide	1,301	394

Pesticide Monitoring Program

The first field sampling conducted by the Pesticide Monitoring Program was the Corn Herbicide Survey Project. The sampling activities of the Corn Herbicide Survey Project were focused on existing private drinking water supplies adjacent to cropland used to grow silage or sweet corn. Survey sampling differs from long-term monitoring in that it screens a variety of well types throughout the state. Long-term monitoring involves repeated sampling of a hydrologically defined well site. The survey project is recognized to be biased towards the selection of potentially positive sites. The Corn Herbicide Survey Project is not intended to be representative of Vermont's water quality. Rather, it is intended to determine whether agricultural chemicals are impacting ground water quality in agricultural areas. Survey sampling was conducted from 263 wells in 94 towns throughout Vermont.

Number of Wells Positive for Herbicide and Nitrate

Number of samples collected	449
Wells sampled for Herbicide	263
Number of Wells Ever Positive For:	
Alachlor	0
Atrazine	11
Cyanazine	1
Metolachlor	2
Simazine	1
Any Herbicide	13
Wells Sampled for Nitrate	248
Wells with Nitrate Never Detected	122
Wells Positive for Nitrate at:	
Less than 4.00 ppm	71
4.00 to 10.00 ppm	34
Greater than 10.00 ppm	21
Total ever positive for Nitrate	126

Distribution of Well Types Samples

Well Type	Wells Sampled	Positive for Herbicide	Positive Nitrate
Drilled	168	4	47
Spring	37	3	28
Dug	30	3	20
Driven Pt.	25	3	20
Unknown	3	0	1
Totals	263	13	126

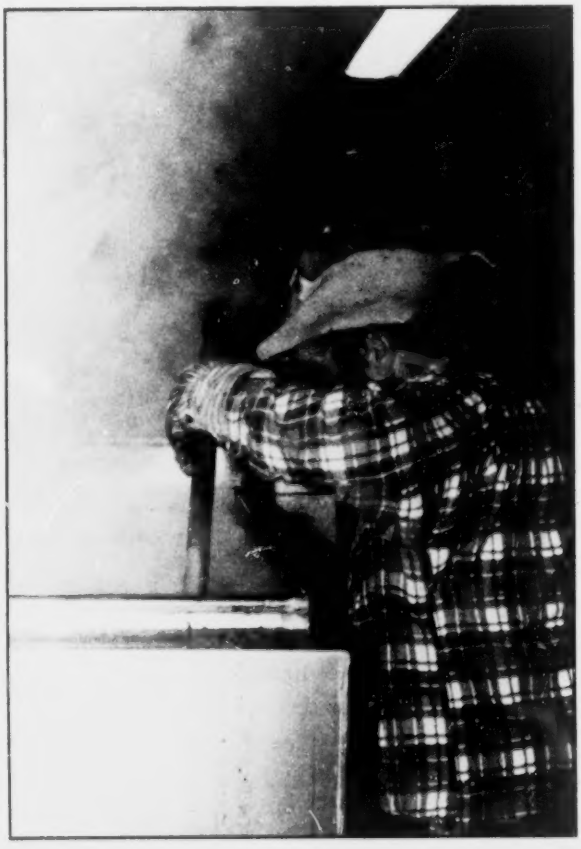
All well owners who participated in the Survey Sampling Project were notified of their results in writing. Written notification included the location of the well, the sampling date(s), the sample number(s), the analytical results, the limit of detection and the health advisory for each active ingredient reported.

The information and experience gained through the Corn Herbicide Survey Project was used to select one site each in Addison and Windsor counties for installation of long-term monitoring wells. The monitoring program installed a total of 15 monitoring wells at these two sites at a cost of $12,000. In addition to the Corn Herbicide Survey Sampling Project and the installation of monitoring wells, the monitoring program funded a $15,000

contract with the University of Vermont to establish site selection criteria for the installation of monitoring wells, recommendations for well construction materials and to develop procedures for the collection and storage of samples. This report was completed in October, 1987 and was used for the installation of monitoring wells during June, 1988.

The monitoring program also awarded $9,000 of contract funding to three projects to evaluate pesticide reduction strategies. One project was to test the effectiveness of a crop rotation and cover cropping strategy in small fruit and vegetable production. The second project was to test the effectiveness of tillage and cultivation practices in corn production. And the third was to evaluate disease resistant cultivars of apples suitable for commercial production.

Lastly, the monitoring program provided funding to integrated pest management and disease resistance variety trials conducted by Agriculture Department personnel, and for the purchase and maintenance of analytical equipment and the training of laboratory staff.



Craftsbury sugarmaker Rick Gutzmann

Exotic Pest Survey and Detection Program

At the request of the U.S. Department of Agriculture, Plant Protection and Quarantine, the Vermont Department of Agriculture's Plant Industry Section continued to participate in the national exotic trapping network. This program sets up a national network to monitor (trap) destructive insect pests not known to occur in the U.S. Early detection of an exotic insect can lead to eradication before it becomes established.

During the biennium, eight insect pests were surveyed under this program. They include:

1) Summer Fruit Tortrix - Adoxophyes orana.
This bivoltine tortricid is responsible for 10-20 percent fruit loss in France and Germany. Pheromone baited wing traps were used for monitoring.

2) Egyptian Cottonworm - Spodoptera littoralis
This insect is a general feeder on crucifers, deciduous fruit trees, grasses, legumes, ornamentals and vegetables. Crop losses of up to 75 percent have been reported in Europe, Mid-East and Africa. Pheromone baited wing traps were used for monitoring.

3) European Cherry Fruit Fly - Rhagoletis cerasi
A relative of our apple and blueberry maggot, damage by this fly can be severe; in Italy, up to 90 percent of cherry fruit have been infested. In Bulgaria, 80-100 percent of the sweet cherry crop has been recorded as infested. Yellow stick board traps, baited with an attractant, were used for monitoring. Pheromone baited wing traps were used for monitoring.

4) Plum Fruit Moth - Cydia funebrana
This Mideast tortricid is a destructive insect pest of plum, cherry, apple, peach, apricot, pear and walnut. In West Germany, yield losses reach 40-95 percent in plum; Switzerland, 70 percent; Yugoslavia, 41 percent; Bulgaria, 60 percent; and in some areas of the U.S.S.R., 100 percent. Pheromone baited wing traps were used for monitoring.

5) Pear Leaf Blister Moth - Leucoptera malifoliella
This moth mines leaves of some fruit trees, especially apple and pear. Continuous mining causes defoliation and eventual weakening of trees. This moth is generally distributed throughout Europe, Iran, Ireland, England and U.S.S.R. Pheromone baited wing traps were used for monitoring.

6) Cabbage Moth - Mamestria brassicae
The range of this moth extends throughout the Palearctic region from Europe to Japan and into sub-tropical Asia and parts of Africa. In England, this moth is a serious pest of cabbage because they feed inside the head, fouling the leaves with excrement and making the heads unfit to eat. In Italy, larvae damage leaves and florets of broccoli. The larvae also resemble the branches so closely that they pass unnoticed through factory processing and freezing until discovered by the consumer. Pheromone baited wing traps were used for monitoring.

7) Silver Y - Moth - Autographa gamma
Larvae of this moth are pests of a wide-range of vegetable crops in Europe. Larvae can feed on at least 224 plant species, including 100 weeds. Literature reports that this noctuid is widely distributed throughout Europe and eastward through Asia to India and China. It has

also been in the African countries of Algeria, Egypt, Libya and Morocco. Pheromone baited wing traps were used for monitoring.

8) Maize Borer - Chilo partellus

A devastating pest of corn and sorghum, this moth is found in India and parts of Africa. Pheromone baited wing traps were used for monitoring.

To date, no exotics have been detected. In addition to regular exotic monitoring activities, the Plant Industry Section developed a long-range monitoring plan for Leucoptera malifoliella and submitted the plan to USDA for funding. We have received no response as yet.

Homeowner Inquiries and Pest Identifications

Some of the more common homeowner inquiries included:

Carpenter Ants (#1)
Cluster Flies (#2)
European Earwigs (#3)
White grubs
Skunk and mole damage
Fleas
Ticks (including lyme disease)
Mosquito and Blackfly control
Japanese Beetles
"Flying Ants" (Acanthomyops claviger)
Aphids
Powder Post Beetles
Birch Leafminer
Gypsy Moth
Africanized "Killer" bees
Springtails

Pest Survey and Detection

During the biennium, the Vermont Department of Agriculture continued to be the lead agency in the cooperative Agricultural Pest Survey (CAPS) Program. This program was formerly known as CNPPSDP or Cooperative National Plant Pest Survey and Detection Program.

CAPS is a nation-wide computer based system for collecting, storing, retrieving and disseminating pertinent pest survey data. In Vermont, this program is a cooperative venture between the Vermont Department of Agriculture, Vermont Department of Forests, Parks and Recreation and the University of Vermont Cooperative Service - Plant and Soil Science Department.

Objectives of the CAPS program are to:

-Conduct surveys for and input data into the NAPIS system on endemic pests of national, regional and/or state significance.

-Provide plant diagnostic services to user groups in the State of Vermont.

-Maintain and upgrade a coordinated statewide monitoring system.

-Continue to support a national computer based pest reporting system (NAPIS).

-Participate in and enter data on beneficials as requested by PPQ or state steering committee.

-Improve computer reporting and retrieval of pest data.

-Insure quality and timely data is entered into the NAPIS system.

-Participate in multi-state projects.

-Enter pest data from diagnostic clinics in the state.

-Develop a new and/or useful pest survey technique to advance survey technology.

-Develop useful software related to the survey and detection program.

-Assist in pest forecasting.

-Set up a network for foreign pest detection.

-Minimize foreign export certification.

-Provide training and updating of field personnel

-Certify presence or absence of an locations of quarantined pests in order to take regulatory action.

-Protect Vermont agricultural and forestry industries from devastating economic pests.

-Provide data necessary to make control recommendations and increase yields.

-Standardize pest reporting and host phenology.

-Increase diagnostic capabilities of state agencies.

As part of the CAPS program, surveys were conducted for endemic pests of regional and state importance. Data was entered into NAPIS on field and sweet corn, apples, ornamentals, turf, small fruit greenhouses, nurseries, Christmas trees, sugar bush and household pests.

Survey Observations

-New state records. European Chafer anddowny mildew on cabbage.

-Prociphilus root aphid survey was conducted on fraser and balsam fir in 25 Christmas tree plantations. Populations were extremely low, possibly due to the drought.

-Spider mite caused considerable damage to balsam fir (1987) in some plantations.

- 1988 was the year of the pear thrips. 469,000 acres were infested compared to 21,800 acres in 1987. Southern Vermont was the hardest hit. Governor Madeleine Kunin established a task force to deal with this devastating threat to Vermont's sugar maple.

-October 4, 1987 - Up to 16" of snow fell on Vermont with Bennington County feeling the brunt of the storm. Shade and forest trees were severely damaged

-Gypsy moth - populations are on the increase, especially in Chittenden County.

-Oystershell scale - commonly found on striped maple and beech.

-Birch leafminer complex - Common on yellow birch in 1988. Severe defoliation statewide in 1987.

-Forest tent caterpillar - populations remain low.

-Saddled prominent - increases found in Orange County in 1988.

-Lecanium scale - Populations remain high in forested and urban areas. Populations extremely high on oak and maple. Dieback is very common.

-Half-winged geometer (Phigalia titea) has reappeared after several years of non-detection. Found in the Springfield area in 1988.

-Kermes scale (Allokermes galliformis) was found on oak in Woodstock. Possibly a new county record.

-Beech bark disease is becoming noticeable from the air.

-Periphyllus sp. - aphids on maple caused considerable leaf yellowing, distortion and premature leaf drop statewide. Oftentimes associated with pear thrips.
-Porcupine damage was on the increase, especially in northern Vermont.
-Ozone pollution was the highest level recorded inVermont in 1988. Plant life damage resulted.
-Japanese beetle populations were severe on some golf courses and treatment was required. A statewide survey detected adults in all counties of Vermont, including areas along the Canadian border.
-Locust leafminer damage was severe in Fairlee, Putney and Richmond.
-Balsam gall midge populations are on the increase. Severe crop loss in some areas was reported in 1988.
-Eastern spruce gall adelgid continues to be the number one pest of ornamental spruce, with white pine weevil number 2.
-Surveys for hemlock wooly adelgid (Adelges abietis) on nursery stock were all negative.
-Butternut cuculio (Conotrachelus juglandis) caused heavy damage to walnut in Barre Town
-Balsam shootboring sawfly (Pleuroneura brunneicornis) populations were high with severe damage reported on balsam and fraser fir.
-Black vine weevil was commonly found on imported Taxus sp. Economic losses to yews was reported statewide.
-Eastern subterranean termite has increased its range to Windsor, Vermont.

Apiary Program

Parasitic bee mites are now considered to be the biggest problem facing the beekeeing industry. The tracheal mite, first found in 1984 in Texas, has now spread to all states except Hawaii. In an attempt to slow the spread of the mites into Vermont, a honey bee tracheal mite quarantine was drafted into the Vermont Apiary Inspection Regulations in 1985, restricting the movement of bees into Vermont from mite-infested areas.

Due to the inaccuracy of the mite detection technique, determining the mite-free areas turned out to be impossible. Bees that were brought into Vermont from supposedly mite-free areas and certified mite-free from the state of origin were found to be infested.

First Mite Found

The first tracheal mite sample detected as positive in Vermont was in March of 1987. The bees belonged to a beekeeper in Chester who purchased four hives that originated in Georgia. The four hives were winter-killed in February. It appeared that the bees lost all social order, broke cluster and froze. One hundred bees from the dead hives were dissected and examined. Forty-three of these bees were heavily infested with tracheal mites.

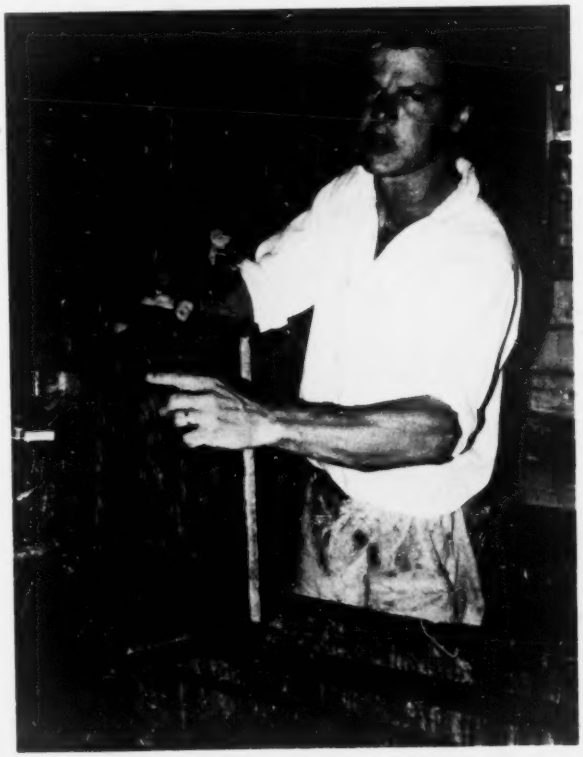
During the following 15 months, seven more apiaries with a total of 50 hives located in four counties were found to be infested. Three of the apiaries with a total of 20 hives had died during the winter. The other four apiaries were depopulated with calcium cyanide (which leaves no residue in the equipment). Destroying bees to control the mite was logical when the infestations were isolated and involved only a few hives.

The chance of reinfestation was slight in those cases, making it a practical plan of action.

It was not until the fall of 1988 that the situation changed. Apparently the level of mites was so low it went undetected in a very popular package bee outfit in Georgia in 1986 and 1987. Hundreds of certified mite-free packages from this company were sold in 1987 to Vermont beekeepers. Samples taken in the fall of 1987 from these bees were negative.

It took about 12 more months for the mites to build up to detectable levels. Samples of the Georgia bees taken in October 1988 from large apiaries in the Champlain Valley were found positive, making it clear that eradication of this pest was impossible. There were too many infested hives and it had spread to neighboring apiaries and undoubtedly to the feral population of bees. Other states in the same situation had tried to eradicate the mite by killing all the bees in every infested apiary. New bees were purchased and in the majority of cases, mites were found again within a year or two. Some beekeepers were needlessly put out of business by these failed attempts to eradicate the pest.

At the present time chemical control is the only practical and economical way to save mite-infested operations. Menthol in a tablet form has proven to be safe and effective in controlling tracheal mites if applied



Charlie Ferree, a beekeeper fromGrand Isle

correctly. A national label for general use by the beekeeper will be in effect by the spring of 1989, giving us time to prevent any major damage from this pest.

Preliminary experiments have shown that some strains of bees are now tolerant to this mite. Queen bees from England, where the mite has been since the early 1900s, will be tested in New York for the so-called tolerance during the summer of 1989.

Varroa Mite

The varroa mite (an Asian bee parasite) was found in Wisconsin on Sept. 25, 1987. This infestation was traced back to Florida and probably originated in South America. State and federal mite surveys have since then confirmed a total of 16 infested states. It has been estimated that one-half of the hives in the U.S. will die due to this pest within the next few years if it goes uncontrolled as it did in Europe during the 1970s and 1980s. This high rate of mortality may be prevented with chemicals that have been perfected in Europe for control of the varroa mite. Fluvalinate, a pyrethriod impregnated in plastic strips similar to a flea collar, has been approved by the EPA for general use on queen bees and eventuallly will be used on all bees. These strips are not 100 percent effective and the mites are expected to develop resistance to almost any chemical in three or four years. It will be an ongoing battle.

No varroa mites have been found in Vermont. During the spring of 1988, 34 queens and 10 colonies were brought into Vermont from Florida, a very heavily mite-infested state. The 10 hives were destroyed because they were infested with tracheal mites. The others have been tested and found to be mite-free. Massachusetts, Maine and New York have become infested from migratory pollinators that winter in Florida. Vermont has no migratory beekeepers. A federal quarantine was enacted in April of 1988 and dropped in one month because it was not effectively preventing interstate spread of the varroa mite and was causing economic hardships to the migratory beekeepers.

There are Asian and African strains of bees that are not adversely effected by this mite. Similar to the tracheal mite situation, a varroa mite tolerant strain of bees may be developed.

Africanized Bees

Africanized bees are supposed to reach Texas within the next two or three years. Attempts by Animal Plant Health Inspection Service and the Mexican government to slow the migration of bees with traps and drone flooding failed.

Experiments in South America appear to have shown that the pure Africanized bee cannot survive cold climates aand may not make it north of Washington, D.C. Beekeepers in Vermont are still concerned that the public may react adversely to all bees even though this is more of a southern U.S. problem.

Honey

The honey crops of 1987 and 1988 were from 40 to 80 pounds per hive, about average for Vermont. The drought in 1988 stunted the alfalfa crop so it did not get cut until after the bloom. Rain came in early August giving the alfalfa enough moisture to make nectar, saving what appeared earlier to be a disaster of a honey crop. The frost held off in 1988 till late September-early October giving the bees a good fall flow of nectar for the winter.

The honey loan program has been working as planned. The federal government was buying as much as 100 million pounds of honey a year under the price support program to keep the beekeepers from going under due to cheap foreign imported honey. Total U.S. government outlays from 1980 to 1987 to acquire and dispose of nearly 500 million pounds of honey forfeited under the price support program was estimated at 425 million dollars. In 1986 a new program was started allowing the beekeepers to sell their honey to the government and buy it back at a lower price.

With this subsidy of about 20 cents per pound, beekeepers were able to sell their honey to the U.S. packers at the lower world honey prices. Imports have declined dramatically, U.S. government outlays for honey storage and giveaways have been reduced, and production and colony numbers have been maintained. Vermont beekeepers put 250,000 pounds of honey into the subsidy program in 1987 and about the same amount in 1988.

Apiary Inspection Data	1987	1988
Hives inspected	4,243	4,240
Apiaries inspected	932	752
Hives infected with American Foulbrood (1.4% AFB)	60	52
Apiaries infected with American Foulbrood	38	36
Hives sampled for tracheal and varroa mites	751	2,603
Apiaries sampled for tracheal and varroa mites	39	221
No. of apiaries found to be infested with t. mites	2	9
No. of apiaries found to be infested with v. mites	0	0

Vermont Ginseng Monitoring Program

In 1987, 46 collectors dug 157.5 pounds of wild ginseng. There were 2,757.87 pounds of cultivated ginseng harvested from two acres of land.

In 1988, 89 collectors dug 295.41 pounds of wild ginseng. A high price of between $200 and $250 a pound and a long, frost-free digging season led to our largest wild ginseng crop ever recorded: 3078.8 pounds of cultivated ginseng harvested. The drought of 1988 did not seem to adversely affect the ginseng.

NURSERY AND GREENHOUSE

The Vermont Department of Agriculture is responsible for certifying plant material produced in Vermont as apparently free of insect and disease problems. Vermont nurseries and greenhouses are visited at least once a year to examine for pests. Plant producers are advised what their pest problems are and what management procedures they should implement.

Certified	1986	1987
Greenhouse & Nurseries	227	239
Nursery Dealers	297	302
Stop Sales	2	3

Stop Sale Orders are issued when pest problems are very severe and the health of the crop is at stake. A few of the pest problems that were identified in 1986 and 1987 were:

Bacterial Blight of Geranium, Xanthomonas campestris pv.pelaigonii
Western Flower Thrips
Pseudomonas spp. on Primulae
Pseudomonas spp. on Pointsettias
Black Vine Weevil on Cyclamens
Heavy spider mite infestations on marigolds
White Pine Blister Rust, Cronartium ribicola
Northern Pine Weevil, Pissodes approximatus
Cyclaneusma needlecast on Scots pine
Prociphilus sp Root Aphid on Frasier Fir
Rhabdocline, Rhizosphera and Swiss Needlecast on Blue Spruce and Douglas Fir
Lecanium scale on oak
Crown gall, Agrobacterium tumefariens on apple
European Snout Beetle on Sugar Maple
Round Headed Apple Tree Borer
Arborvitae Leaf Miner

Certificates Issued

The Plant Industry Division and Retail Inspection certify that plants and plant products produced in Vermont to be sent to other states, U.S. territories and foreign countries are free from quarantined pests. This program is in cooperation with the U.S. Department of Agriculture and other states.

	1986	1987
State Plant Phytos, other than Scleroderris	3	12
Federal Phytos	8	12
Houseplant Inspection Certificates	12	17

Seed

The Vermont Seed Law was developed to protect the consumer. The yield obtained from a crop at the end of the season depends on the quality of seed and weather conditions during the growing season. With high quality seed which is free of noxious weed seed, the grower is off to a good start achieving his or her yields.

Inspection of Commercial, Agricultural and Vegetable Seed
1986-87, 1987-88

Samples Collected	86-87	87-88
No. Agriculture Seed	104	217
Violations	7	7
No. Vegetable Seed	117	85
Violations	3	5
No. Mixtures	46	52
Violations	15	15
Total Seed Samples Collected	267	354
Number of Seed Companies	29	37
Samples Collected From Stores	38	33

Integrated Pest Management

During the 1986-87 and 1987-88 field seasons, a program was started looking at the possibility of an Integrated Pest Management Program, suitable for Vermont's 300 acres of nursery stock.

Integrated Pest Management is an approach to the management of crop pests such as insects, diseases and weeds which brings together all the management strategies available to the grower. These management strategies include biological control, cultural control, resistant plant varieties and pesticides.

During the last biennium, we have been collecting information on what economic pests occur in Vermont's nurseries (Table 1). Once this list is established we can evaluate different monitoring methods for these pests and explore best management techniques to manage their populations.

Economic Pests in Vermont Nurseries, FY '86, FY '87

Insects	Disease	Weed
Cottony Maple Scale		Quince Rust
Sedges		
Lecanium Scale	Alternaria Leaf Spot	Crown Vetch
Locust Pod Galls	Nectria Canker	Bladderwort
Aphids	Rhizosphaeria	Witchgrass
Rose Chafer	Needlecast	Wild-Raspberry
European Snout Beetle		Curly Dock
Arborvitae		
Arbuitae Leaf Miner		
Round-Headed Apple Tree Borer		

Ribes Susceptibility to White Pine Blister Rust

There has been an on-going project to assay the different cultivators of gooseberries and currants (Ribes spp) for susceptibility to the White Pine Blister Rust Fungus (Cronartium ribicola). This work is being conducted in cooperation with UVM's Department of Forestry.

The results from the first two years of testing are:

Varieties	Infection	
	1986	1987
Consort Black Currant	+	-
Red Lake Currant	+	+
Poorman Gooseberry	+	+
Pixwell Gooseberry	+	+

The expected completion date of this program is October 1989 provided there is not another drought. Results from 1988 were nil due to the drought with very low disease levels.

Seventeen varieties have now been planted at the Jericho Research Forest and will be evaluated at the end of 1989. At that time new recommendations will be made on the planting of gooseberries and currants in Vermont with respect to the Vermont Department of Forests, Parks and Recreation's quarantine on planting of Ribes.

New England Greenhouse Conference

During the past biennium our plant pathologist served on the regional committee for the New England Greenhouse conference. Some of the activities included the book, "New England Greenhouse Pest Control Recommendations for Greenhouse Producers in New England". This publication includes basic information on insects and plant diseases, as well as cultural, safety and general pesticide information.

Report on Employment Opportunities in the Horticulture Industry

Among the many disease and insect problems in Vermont's nurseries and greenhouses, one problem, labor strategies, has been with the industry since 1985. The horticulture industry is comprised of nurseries, greenhouses, landscapers, landscape maintenance firms and combinations of these. All work with various aspects of plant propagation and plant care. The horticulture businesses were surveyed to determine if a labor shortage really existed, what the industry expected of its employees, and benefits of working in the nursery industry.

The results of the survey were summarized in a report sent to vocational educators throughout Vermont. There are many job opportunities in Vermont for part-time and full-time employment in horticulture. Most importantly, these positions pay well above the minimum wage and benefits are included by more than half of the nursery industry.

Special Projects

Fresh Market Pea Variety Trials

Peas (Pisum sativum) are one of the first crops picked and sold at Vermont's fresh market stands. In order to have early harvest, growers must plant pea seed early in the spring, as soon as the ground can be worked. Unfortunately, this is also the same time that many fungal plant pathogens are the most active. This variety trial was conducted to determine which varieties were the most tolerant of root rotting fungi, produced high yields and had the earliest date.

The variety trials were conducted at the fresh market farm of Tim and Janet Taylor in Ely, Vermont. Twelve varieties were tested in randomized block design. Peas were planted on April 18, 1986, with a Jr. Seeder. The field had been manured and tilled prior to planting. Peas were harvested as close to ripeness as possible, were weighed and then sold at the farm stand.

This work was a cooperative study between the Vermont Department of Agriculture and UVM Extension Service. Much help was received from Gary Deziel and Rob Hedburg, County Extension Agents from Washington and Windsor Counties.

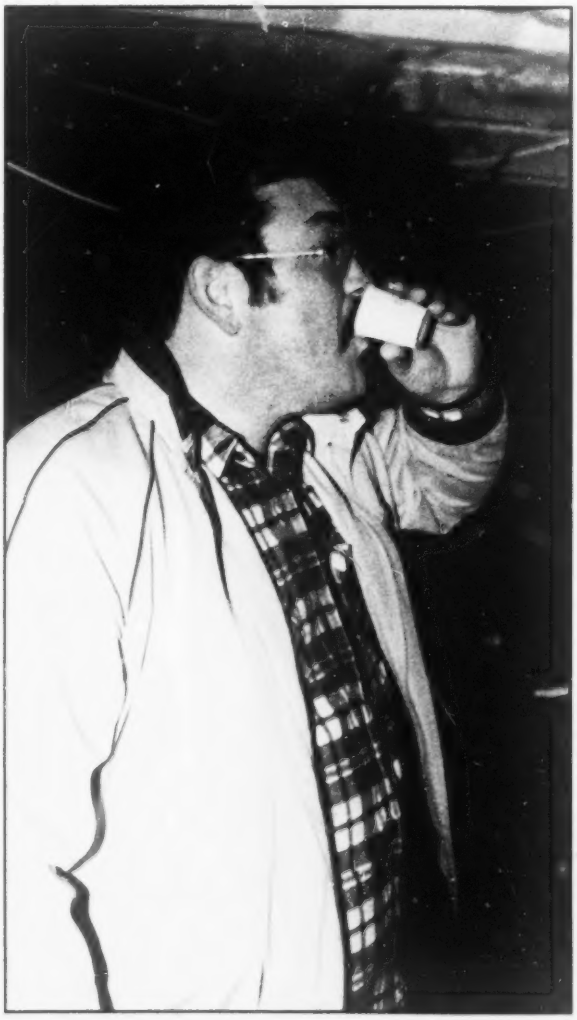
Yield Information
1986 Pea Field Variety Trials

Variety	Av. yield (oz) per 10' row	Days to harvest	lbs./ 300' row
Sparkle (3)	65.70	77	123
Greater Progress (3)	58.54	82	108
Green Arrow (3)	98.60	96	184.8
Knight (3)	38.86	74	72.9
Little Marvel (3)	67.30	85	126.2
Bolero (2)	89.70	85	168.2
Progress #9 (2)	51.30	77	96.2
Olympia (1)	51.56	74	96.6
Early Frosty (1)	95.30	85	178.6
Mayfair (1)	119.50	90	224.1
Maestro (4)	40.72	74	76.4

Seed donated from: Agway, Inc., Syracuse, NY, Asgrow, Mechanicsburg, PA, Harris Moran Seed Co., Rochester, NY, and Johnny's Selected Seeds, Albin, ME.

Cyclaneusma Needlecast on Scots Pine

Cyclaneusma Needlecast disease of Scot Pine has been a problem for a number of years in Vermont's Christmas Tree plantations. The fungus kills second and third year needles, leaving the tree very thin and unsaleable. The majority of research in this area has been conducted to determine when the infection period occurs in Vermont. Two-year old Christmas tree seedlings have been placed in two Christmas tree plantations where Cyclaneusma occurs. These trees will become infected. A problem with this disease is that symptom development does not occur for 18 months after infection occurs. The final results of this study will be available in the Spring of 1990.



Henry Marckres, Consumer Assurance inspector

Laboratory Section

John J. Jaworski, Laboratory Supervisor	
Chief Agricultural Chemist	Rudolph L. Polli
Chemist Specialist	Nathaniel C. Shambaugh
Chemist B	Kevin Jay
Chemist A	Cyndi Manosh
Microbiologist B	Laurie Justis
Microbiologist A	Richard Stewart
	Romeo Cyr
	Victoria Jamison
	John Santorello

The Central Testing Laboratory is composed of Animal Health, Dairy Products, Meat Inspection, Pesticide Analysis and Feed and Fertilizer sections.

The primary objective of the Laboratory section is to provide the laboratory capability to enable the Vermont Department of Agriculture to meet the following objectives: (1) protect the public from health hazards resulting from animal disease, unsanitary conditions in food production, food processing and marketing, (2) improve the quality of agricultural products, (3) offer services to farmers and consumers of agricultural products, (4) protect the public from fraud in the marketplace, (5) protect the farmer from extraordinary economic losses and (6) convince the public that Vermont agricultural products are of superior quality.

The five major program areas are:

1. Livestock Laboratory - Responsible for analyzing blood serum and milk for brucellosis and blood samples for Pullorum-Typhoid and Mycoplasma. These results are reported to the Livestock Division.

	1987	1988
Milk Ring Tests	19,629	14,093
Blood Tests (includes cattle swine and goats)	49,792	53,553
Poultry Testing		
Pullorum-Typhoid	14,321	22,387
Mycoplasma Gallispeticum	885	1,131
Mycoplasma Synovia	805	1,261
Parasite Samples		2

This laboratory is also responsible for issuing supplies to state and federal inspectors, veterinarians, slaughter plants, commission sales and auctions. Brucella vaccine and tuberculin are issued to veterinarians only.

2. Dairy Products Laboratory (Central Dairy Testing Laboratory).

This section analyzes dairy products sold within the state on a monthly basis for the Dairy Division to ensure they meet state and U.S. Food & Drug Administration minimum standards. This laboratory also analyzes all farm

water supplies used to clean and sanitize milking equipment.

The dairy laboratory also places high priority on requests from consumer, producer, industry, other state agencies and the Extension Service for help with problems in the production of quality dairy products.

Numerous test procedures are used. The most important are butterfat, bacteria counts, coliform counts, phosphatase, antibiotics, added water and flavor.

The total number of tests run for the biennial period are:

	1987	1988
Tests on Fluid Dairy Products	34,162	33,356
Tests on Frozen Desserts	1,009	3,313
Water Analyses	2,476	1,890

A small but continuous commercial analysis program has been in existence for years to counteract the shortage of commercial laboratories in the state. This work is done on a fee basis.

3. Meat Inspection laboratory - This laboratory provides services to the Meat Inspection Section, consumers and the meat industry. Its legal mandate is to ensure that meat and meat products are wholesome, unadulterated and in compliance with state and federal legislation.

Meat samples and processed meat products are brought in for analysis by meat and retail inspectors, State Purchasing Division, consumers, and law enforcement agencies. Some of the common analyses performed on meat products are fat content, protein, salt, nitrites and antibiotics.

	1987	1988
Meat Samples Analyzed	170	277

4. Pesticide Analysis Laboratory - The pesticide laboratory was created to monitor pesticide formulations sold at the retail level, monitor pesticide applicators and their products, and to check pesticide residue levels in areas which may have been treated. These services are performed for the Plant Industry section to ensure the public is safe from the misuse of pesticides.

The pesticide laboratory was expanded in 1986 to include a pesticide monitoring section responsible for measuring pesticide residues in environmental samples. Since 1986, the monitoring section has been surveying corn herbicide levels in wells near cornfields.

State-of-the-art scientific instrumentation and the analytical expertise of the staff has greatly improved services provided by the Laboratory Section to the Vermont Department of Agriculture, the agricultural community and the consumer.

During the biennium, the following analyses were performed:

	1987	1988
Formulation Samples	125	262
Residue Samples	174	194
Monitoring Samples	294	2 5 3

5. The Feed/Fertilizer Laboratory - The feed/fertilizer laboratory program was transferred from the University of Vermont to the Department of Agriculture in 1987. This move was made: (1) to provide greater service to the public by offering more tests. (2) to make more comprehensive analytical results available. (3) to eventually monitor feeds and fertilizers for drugs and pesticides. (4) to integrate regulatory responsibilities and analytical expertise within the Department. (5) to save taxpayers money in the long run.

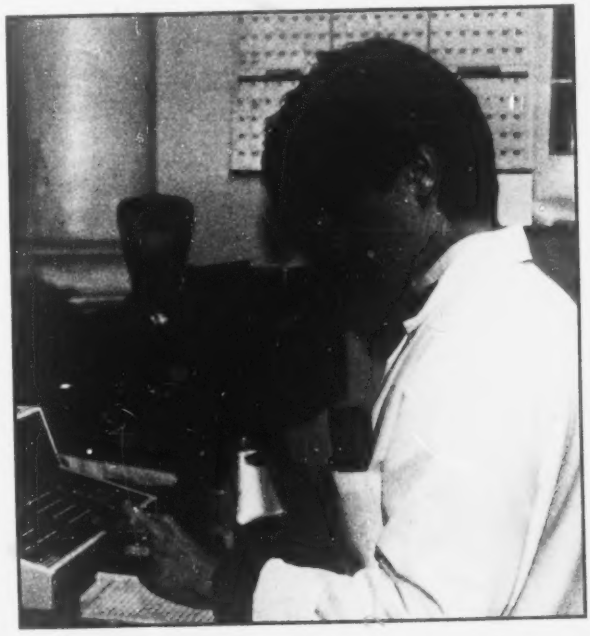
The feed and fertilizer laboratory is responsible for monitoring feed and fertilizer formulations sold on the retail market to ensure they meet label guarantees, and to monitor farm water supplies for fertilizer contamination. It is developing methods to analyze for drug and aflatoxin residues in animal feeds.

The total number of tests performed this biennial period is:

	1987	1988
Feed/Fertilizer	2118	6592

Another succesful function of the Laboratory Section has been the training of other federal, state and industry analysts. This program has improved cooperation and uniformity of testing for the benefit of all, since Vermont is an exporting state.

Each major section of the laboratory has participated at least annually in national proficiency testing programs. Each section is also approved by its federal counterparts to do the official analysis for interstate shipment of animals, dairy products, meats, animal feeds, fertilizers and to control the use of pesticides.



Cyndi Manosh, laboratory technician

Weights & Measures, and Retail and Shipping Point Inspection Section

Trafford Brink, Supervisor, Weights and Measures
Jeanne Kopach, Secretary C
Melody Campbell, Secretary B (half-time)
Raymond Cioffi, Metrologist
Bruce Martell, Supervisor, Retail and Shipping Point Inspection

Inspectors:
Ken Atwood Greg Ballou
Frank Bump Jim Cameron
Ron Fisher Robert Howard
Darryl Kuehne Henry Marckres
Kimberly Peck/Peterson

Retail and Shipping Point Inspection

This section operates and manages inspection programs for maple products, apples and eggs. When needed and possible, personnel from the Weights and Measures Section were trained and used for these programs. Such adjustments have increased the staff's capacity to work more economically.

Retail inspection work performed during the biennium included 1,189 retail store inspections of maple syrup, eggs, potatoes, apples, strawberries, including refrigeration and freezer inspections; 763 violations were found resulting in approximately 230 visits to producers to provide technical assistance to resolve problems found in retail stores.

Retail store inspections have also served as a means of getting such information as source of supply for Vermont-produced products, and value of Department of Agriculture programs to retail store owners.

Apples

Vermont apple growers produce approximately 1.1 million bushels per year. The Retail and Shipping Point Inspection Section checks all apples destined for export, under the authority of the United States Department of Agriculture. During the biennium, approximately 100 container loads of apples were exported each year to the United Kingdom and Canada. Vermont monitoring under USDA authority provides the marketing system with unbiased grading and certification for domestic and international trade channels in order to help sell Vermont-produced apples.

The section also administers the Vermont Controlled Atmosphere Program for apples. This mandatory program assures compliance with storage standards so that high quality apples are available in the market place. Personnel from this section inspect all 37 controlled atmosphere storage facilities.

In addition to the certificates issued on shipments of apples slated for export to other countries, this section issues about 400 Cold Storage Certificates per year on Vermont apples which are to be shipped to California and Arizona.

Poultry and Eggs

The section administers the U.S.D.A. Shield Egg Program in Vermont. One federally licensed shell-egg grader works full-time at the only Vermont plant enrolled in the program. Some chain stores require shield eggs as a contract condition. The program is designed to assure consumers a continuous supply of high quality eggs.

Federally licensed personnel also administer the Federal Shell Egg Surveillance Program. This program ensures consistency of egg quality and safeguards the public health. It regulates the processing and distribution of eggs and egg products to prevent the movement or sale for human food of eggs and egg products which are misbranded or otherwise in violation of the Egg Products Inspection Act. This is accomplished by quarterly inspections of all farms with 3,000 or more laying hens. There is a review of company records, methods of handling restricted eggs, and a physical check of product packed as restricted eggs and those packed for distribution to the ultimate consumer. Fifteen poultry farms are registered in the Federal Shell Egg Surveillance Program.

Seal of Quality Program

This program identifies superior Vermont agricultural products. The Retail Inspection Section is involved in the regulatory portion of this program by:

1. Inspecting producer facilities and monitoring product at the shipping point and retail level for quality.
2. Assisting participants with production and product quality.
3. Evaluating new applicants applying for the Seal of Quality.
4. Writing new, and evaluating old Seal of Quality standards as required or requested.

During this biennium, about 200 Seal of Quality inspections were performed by the Retail and Shipping Point Inspection Section staff.

Maple

The maple industry in Vermont comprises an estimated 2,500 maple producers. Production during the 1987 season was approximately 275,000 gallons, and during the 1988 season about 370,000 gallons were produced by Vermont sugarmakers.

The 1987 maple crop was the lowest production reported in over 15 years. Unfavorable weather conditions (too warm early in the season) resulted in lower production and darker than normal color. The decreased production increased prices however, helping to alleviate some of the impact on the sugarmakers caused by the poor year.

The Retail and Shipping Point Inspection Section performed approximately 225 inspections at sugarhouses

during the 1987 and 1988 sugaring seasons to ensure compliance with Vermont maple regulations and to help producers with product problems.

In compliance with the Vermont Maple Products Regulations, 24 maple dealer licenses were issued during each year. The licensing procedure requires continuous monitoring of companies which import maple syrup from other states and Canada. Our maple regulations and U.S. Customs regulations ensure that retail purchasers in the United States are aware of the country of origin of the maple syrup they purchase.

Section personnel also spot-check maple syrup and other products labeled as pure for adulteration. Only 100 percent pure maple syrup is allowed in a product labeled as such. During this biennium various maple product samples were tested for adulteration. When the testing results showed that there was adulteration, the producer was notified and ordered to bring his or her product into compliance with Vermont law.

This section, in cooperation with the Vermont Maple Sugarmakers Association, is also responsible for developing and assembling 1,400 maple syrup color grading kits per year. These kits are prepared at the Department of Agriculture, and the Sugarmakers Association covers the expenses and the distribution of the kits to producers.

Education

This section also has an educational purpose. Representatives from this section provide quality control workshops at various events during the year, work with vocational agriculture instructors and their students throughout the state demonstrating proper techniques used in grading agricultural products, provide technical assistance to individual producers and groups, and make presentations at county maple meetings.

Section personnel also serve as judges at many county fairs and the Vermont Farm Show, and follow up on problems encountered during judging. Helping producers determine the cause of problems which prevented their entry from getting a first prize also helps to put a better quality product in the marketplace.

Education still continues to serve as the best means of quality control.

Weights and Measures

During this biennium, Weights and Measures has continued its program to promote equity and fairness in all commercial transactions involving the use of weighing or measuring devices. This includes the testing of packaged commodities, retail deliveries of fuel oil, propane or gasoline, bulk or wholesale measurements of firewood, feed, construction materials and meat.

The approximate number of measuring devices and package weight inspections performed during this biennium were:

	Total Number Tested	Rejected	Adjusted
Small Scales	5,749	388	323
Liquid/Linear Measure	100	0	0
Weights	1,447	10	0
Gas Pumps	6,091	446	38
Heavy Duty Scales	858	158	358
Vehicle Meters	1,092	21	254
Air Eliminators	1,113	21	0
Plant Meters	78	10	37
LP Gas Meters (Truck Meters & Fill Stations)	460	36	437

	Total Checked	Correct	Light	Heavy
Packages Checked	51,681	38,654	7,537	5,490

Besides performing required device testing, and retail store inspections, Weights and Measures personnel investigated consumer and retailer complaints on issues ranging from short weight, unit pricing, and firewood deliveries, to the "discount for cash" on gasoline sales issue.

Each year Weights and Measures inspectors receive at least 30 hours of training conducted by National Bureau of Standards training officers. During this biennium Director Trafford Brink also gave two 30-hour training schools on gasoline meters and small electronic scales. Microprocessor technology has greatly complicated measurement equipment and procedures, thus creating the need for ongoing training.

Measurement Center

Our Metrology Lab provides the legal basis for all weights and measures enforcement by certifying field standards and test equipment used by inspectors in the verification of scales and meters.

This same testing service is offered to, and is used by, scale and meter service agencies throughout Vermont and New Hampshire. During this biennium the following number of devices were tested in our lab:

Test Weights (10 mg. to 1000 lb.)	1,096
100 Gallon Provers	2
5 and 10 Gallon Test Measures	60
Syrup Hydrometers	7,000
Certified Sap Hydrometers	796
Temporary Maple Grading Kits	2,400

Agricultural Development Division

Amanda S. Legare, director
Michele Beebe, agricultural marketing representative
Teresa Doyle, secretary (transferred 8-88)
Dan Connor, marketing specialist
Steven Justis, marketing specialist
Richard Rogers, marketing specialist
Everett Willard, maple marketing specialist
Sharon Shepherd, secretary (left 11-88).
Pat Ward, secretary
Kate Finley

The Development Division's purpose is to ensure the economic viability of Vermont agriculture by promoting Vermont agricultural products and developing markets for those products. Its staff includes five marketing specialists who work in 13 commodity areas.

The division provides staff and money to support the marketing programs of Vermont's 12 commodity promotion boards and to help specialty foods and commodity producers participate in trade shows. It is involved in Vermont's agricultural fairs, field days, crop festivals, farmers markets and other promotional activities.

The division also helps fund the Vermont Organic Farmers Association's organic certification program.

Amanda Sessel Legare was hired as director of development in January, 1987, replacing Barbara M. Monti, who had been director since July 1985. Legare came to the department with a background in journalism, farming and tourism, and with agricultural development and marketing skills.

The following programs and projects were started during Legare's tenure:

Diversification Grant Program:

The development division initiated a "Diversification Grant Program" in 1988. Thirty-five thousand dollars was budgeted for grants not to exceed $2,500 per grantee.

The purpose of the program was to stimulate more profitable agriculture through diversification. Grantees were required to submit a written report of procedures, findings and recommendations upon completion of the project.

More than 100 people applied for a grant. Among the 16 projects funded were: a farmstead cheese, medicinal herb production, cashmere goats, root control nursery containers, and a poultry processing plant.

New Brochures:

The development division prints more than one-half million brochures a year. Some are the products of the combined efforts of the 13 promotion boards and development's staff.

Among new brochures printed: Vermont display and herb gardens open to the public, Seal of Quality, farmers' markets, lamb, cheese, pork, specialty food directory, export directory, wholesale directory, wool, milk and plantsmen brochures.

New Trade Show Participation:

In the past, the division had participated in several trade shows in Europe and two in New York. During this biennial, the division participated for the first time in the Vermont Travel Industry Conference, the Natural Food Show East in Baltimore, the Dairy Deli Show in Boston, and the Travel and Lodging exhibition in Manchester, Vermont.

Also during this period the division gave $3,500 for pear thrips research; developed a slide library; supported the efforts of other agribusinesses such as Deep Root Organic Truck Farmers; backed legislation which made deer farming legal in Vermont and another which made the selling of Vermont wines bearing the Seal of Quality legal in state liquor stores.

Many promotional activities were added or expanded. These include the world's largest sugar on snow plate, the Vermont dairy farmers' banquet, A Vermont Christmas in Boston, Ag Day at the Legislature, the Vermont Dairy Celebration, Vermont Maple Tapping Ceremony, Vermont Food Products Dinner, and numerous smaller events.

Apple Marketing Order

The Vermont Apple Marketing Order entered its second and third years during the biennium. Over half the proceeds from the marketing order were sent to the New York and New England Apple Institute to support regional marketing efforts. The Marketing Board adopted a new logo which emphasizes the important role of the McIntosh variety. The logo is being incorporated into promotional and education materials developed by the Board.

Cheese

Cabot Creamery, Ben & Jerry's Ice Cream, International Cheese Co. and Vermont Department of Agriculture sponsored the Vermont Dairy Stoweflake Promotion in Stowe March 5-7, 1987. Dairy, deli and frozen food buyers from the Northeast retail food industry toured the three foodmakers' facilities and attended a reception featuring Vermont foods.

Nine Vermont companies were featured on "What's Cooking With Burt Wolf," a television news segment with an audience of about 35 million people around the world. Some of the videos produced were: Cabot Cheese, Joseph Cerniglia Winery, Shelburne Farms and Vermont Country Lamb.

Christmas Trees

Promotion and education were emphasized during this transition period for Vermont's Christmas tree industry. Nationally, there is an oversupply of Christmas trees. Growers are beginning to work on grading standards and branded products.

Dairy Markets Development

This program helps ensure that Vermont milk and added-value dairy foods are of premium quality when they reach the consumer, thereby maintaining markets and fostering new ones.

It is directly involved in new product research and development, marketing and dairy promotions in Vermont and southern New England. It is also involved in designing and implementing promotional materials about Vermont dairy foods.

The market-wide program educates constitutents and monitors and improves quality, flavor and marketability of raw and finished products. Clientele includes dairy farmers, milk processors and handlers, retail dairy managers, the food service trade, vocational agriculture educators, students and others.

Vermont has 2,526 dairy farmers who produce more than 2.4 billion pounds of raw milk that, once processed, has a value exceeding $400 million. The dairy industry is the primary contributor to our state's agricultural base.

The provide flavor analysis to dairies which purchase Vermont milk for processing into finished products. We offer retail dairy department evaluations to retailers in Vermont and southern New England chains. These evaluations provide supervisors and merchandisers with information about the successful operation of their dairy sale area (temperatures, codes, cleanliness, rotations, product knowledge, flavor analysis, merchandising, marketing and promotion). Our consulations give dairy department managers a chance to observe the dairy case from a new persepective, helpful in identifying problems.

Our three-part video production titled "A Heritage of Excellence: Vermont Dairy Products" and printed promotional material are used nationally by dairy processors and retailers as technical support and in training. Additionally, the first two parts of the video are used by school systems, museums, public television, government agencies, promotional organizations and others. Several Vermont dairies have used it for TV commercials.

To educate dairy farmers, we have produced milk flavor sheets that discuss four flavor defects (feed, unclean, rancid, and metallic oxidized) and how to correct them. We plan to do three more in the next fiscal year.

We are involved with dairy marketing and promotional campaigns (New England Dairy Deli Show, Vermont Dairy Celebration, Vermont Lodging Association and others), designed to increase awareness of Vermont dairy .Along with the Dairy Division we present workshops on milk flavor defects due to farm transport at each of the six Vermont bulk milk hauler meetings. We coordinate the Vermont and Mid-Atlantic regional dairy food contests held in Barre and West Springfield, Mass.

Export Development

Devaluation of the U.S. dollar spurred interest and activity during the biennium. Apples, maple products and livestock continued to be most important export commodities.

In 1987, the department participated at the International Food and Drink Exhibition in London. The Vermont Apple Marketing Board participated in SIAL, held in Paris, as a cooperative effort with Maine and New Hampshire. In September 1987, Vermont hosted a tour by nine apple importers from the United Kingdom.

Through the regional export council, EUSAFEC (Eastern United States Food and Agricultural Export Council), four Vermont companies received matching funds from the federal Targeted Export Assistance (TEA) PROGRAM. The department also assisted Vermont companies to develop export packaging for products including American ginseng, maple products and apples.

Greenhouse and Nursery Industry

In June 1988, the Department began studying the production of field grown cut flowers for wholesale markets.

Wholesale florists in Vermont and Boston were contacted to determine species, costs and demand. A three-year field trial is being planned, possibly using funds from the Federal-State Marketing Improvement Programs. The first indications are that later blooming perennials might be readily marketed from Vermont.

Livestock

During January, the Agricultural Development Division was invited by the producer of WCAX TV's Across the Fence program to begin a series focusing on Vermont agricultural products. The division has since highlighted a variety of producers and their products, including veal, goat's cheese, nursery stock, and smoked meats.

The division helped organize Vermont's first Beef Industry Council in May 1987. The council collects $1.00 from every sale of a bovine animal originating from Vermont. Half of those funds are forwarded to the National Beef Promotion and Research Board as authorized by Congress in October 1986. The Vermont Beef Industry Council's initial focus is on promotion, research, and education in three product areas. First, because of the importance of the state's milk industry, the council will try to increase demand for boneless beef originating from dairy herds. The council's second goal is to enhance the image of Vermont-produced beef through print ads, brochures, and special events. Its third goal is to educate consumers about Vermont's excellent veal products and to improve demand through cooking demonstrations and tastings throughout the state.

The 1988 Legislature approved a change in legislation which legalized the farming of fallow deer in Vermont. It has been estimated that 30,000 tons of venison are imported into the U.S. annually. This has sparked an interest in developing a deer farming industry within Vermont as well as many other states. Hundreds of Vermonters have called the department since hearing about the legalization of venison production. The Agricultural Development Division is assembling information and protocol for the new industry's participants. A deer farming manual for Vermont's producers will be published in 1989.

The 1988 Legislature created a position for a meat marketing specialist who will be hired during the latter part of 1988 to work with other marketing representatives on the staff to develop diversified and profitable markets for Vermont's food producers.

Small Fruit and Vegetables

There was strong activity in the small fruit and vegetable industry, both in retail and wholesale production. The organic certification program, which the Vermont Department of Agriculture began supporting in 1985, showed particular growth. The department funded a field inspector for the 1987 and 1988 seasons to certify crops to standards developed by the Vermont Organic Farmers, a committee of the Natural Organic Farmers Association of Vermont. In 1985, 15 farmers were certified. By 1988 that grew to 29.

The department helped lead the way to the development of similar standards for the northeastern U.S.

In 1987, the department, in cooperation with the state Economic Opportunity Office, initiated a pilot project to acquaint low-income Vermont families to state farmers' markets. Three markets were included in the first year of the Vermont Farm to Family Project: Northwest (St. Albans) Poultney and Newport. In 1988, the pilot was expanded to five more markets: Bennington, Brattleboro, Burlington, Morrisville and Randolph.

During the two years, $30,000 worth of coupons were distributed to needy families to be redeemed for food products at designated markets. Market vendors in turn were reimbursed by the Vermont Department of Agriculture.

About 325,000 brochures listing small fruit and vegetable retailers were distributed as an insert in several newspapers throughout the state in 1987 and 1988.

A new fruit and vegetable logo was adopted in 1988 and is being used for printed items.

Early market potato and pepper variety trials were conducted in 1986, part of an effort to maximize incomes of small direct market farms. Several potato varieties were found to have considerable potential for the early local market, including 'Caribe' (Canada), 'Reddale' (Minnesota) and 'Redsen' (North Dakota).

The Vermont Maple Promotion Board

The Vermont Maple Promotion Board was organized in 1981 to promote Vermont maple products. The board is financed by voluntary contributions from Vermont maple producers. It has also received grants from the Department of Agriculture.

The board has a good working relationship with the International Maple Syrup Institute and we have jointly sponsored some projects.

Our 1987-1988 activities include:

Sponsored Maple Essay Contest.
Sponsored Governor's Tree Tapping Event.
Carried out pre-Christmas advertising campaign.
Advertised in Vermont Business Magazine.
Maintained and insured Mobile Sugar House.
Sponsored "Cooking with Burt Wolf" television program for worldwide cable television.
Printed, with the Department of Agriculture, "Sugarhouses Open to Visitors."
Furnished maple products for promotion.
Furnished teachers with Maple Sugaring in Vermont: A guide for Elementary Teachers.
Distributed "A Proud Tradition," maple video.
Purchased and distributed "Maple Syrup - The Flavor of Vermont" pins.

Developed a new education video film, "The Maple Sugaring Story," which will be accompanied by a complimentary teacher's guide.
Cooperated with City of Barre in sponsoring the World's Largest Sugar-on-Snow Tray.
Printed maple price rise explanation poster.
Participated with the Department of Agriculture in several food shows.

The Board recognizes that we must have an aggressive promotional program to preserve the image of "Vermont - The Maple State".

Everett Willard, Clerk

Vermont Agricultural Enterprises

In 1973 the Vermont Department of Agriculture organized Vermont Agricultural Enterprises as a legal entity to coordinate and manage the agricultural activities in the Vermont Building at Eastern States Exposition, W. Springfield, Mass. The membership of this tax-exempt organization is comprised of 16 other agricultural organizations.

When Vermont Agricultural Enterprises was first organized, the main responsibility for management of the building was with the Vermont Agency of Development and Community Affairs, but in 1978 the Legislature transferred it to the Department of Agriculture. By contract, the Department of Agriculture transfers this responsibility to Vermont Agricultural Enterprises.

The State Buildings Division bears responsibility for maintenance, repairs and alterations. In 1987, the Buildings Division brought the Big E building steeple to Montpelier and rebuilt it, improving the building's appearance.

Vermont Agricultural Enterprises takes Vermont farm products to the Big E and sells them in half the building. The other half is devoted to agricultural displays, exhibits and demonstrations. The profit from sales pays the cost of operation of the entire building. We are fortunate to have this self-supporting promotion of Vermont farm products located in the heart of our marketing area. It is estimated that 600,000 people are exposed to this promotion during the twelve-day fair.

Each year more than 150 people, representatives of Vermont agriculture, work at least part-time in the Vermont building. Most of these people are unpaid volunteers. Among them are 24 4-H young people who create a very good image for Vermont young people.

The Vermont Travel Division operates an information booth within the building encouraging visitors to visit Vermont.

The Big E operation is a good example of organizations working together to successfully promote their products and the State of Vermont.

Everett Willard, Manager

The Vermont Farm Show, Inc.

The Vermont Farm Show continues to be a popular educational event, held each year on the last Tuesday, Wednesday and Thursday of January. Even though farm numbers have declined greatly in the last few years, the number of exhibitors has not. In both 1987 and 1988, as in all recent years, some people could not exhibit because there wasn't enough booth space.

Due to the increased diversification of agriculture we are having more agricultural organizations holding educational meetings during the three-day show than in previous years. This is an indication that the farm show is meeting its objective of educating Vermont farmers. Recent years have seen an increase in the number of part-time farmers and the farm show education is of tremendous help to them.

We are presently getting many more entries in the products contests than we did twenty years ago. We now have 10 different categories of products, 46 classes, providing education to producers. The producer of every product entered either receives an excellent award or an explanation of why the product failed to rate. This procedure is valuable in helping producers improve the quality of their products.

The Future Farmers of America is very active in the farm show activities. The Vermont Farm Show Inc. membership includes:

Vermont Beekeepers Association
Vermont-New Hampshire Potato Growers Association
Vermont Sheep Breeders Association
Vermont Beef Producers Association
Vermont Poultrymen's Association
Vermont Maple Sugar Makers Association
Vermont Horticulture Association
New Hampshire-Vermont Christmas Tree Association
Vermont Plantsmen's Association
Vermont Dairy Industry Association
Vermont State Rabbit and Cavy Breeders Association

The officers of the Vermont Farm Show, Inc. are:
President - Charles Mason, Pawlet
Vice President - Herbert Hunt, Graniteville
Secretary/Treasurer - Sandra Tarrier, Westford
Manager - Everett Willard, Montpelier

Assistant Manager - Richard Rogers, Chelsea

Administration Division

Paul A. Stone Terminated 01/01/87	Commissioner
Ronald A. Allbee Appointed 01/01/87	Commissioner
Charles W. Paine	Deputy Commissioner
William H. Rice	Legal Advisor
Steven J. Wallach	Chief of Information and Education - Agri. Information
Loreen M. De Geus 01/11/88 - Present	Agri. Research Chief
Gail M. Cumming	Private Secretary

Business Office

Elsie W. LaFlamme	Business Manager
Deborah A. Matheson	Administrative Assistant
Tammy L. Kelley 08/24/86 - 05/08/87	Account Clerk
Anthony G. Royer 07/27/87 - 05/03/88	Account Clerk
Dennis W. Parker 05/23/88 - Present	Secretary B

The Business Office is assigned the administrative functions for the department. This office works closely with the Commissioner and Deputy and has direct communication with the program directors, assisting with and establishing departmental policies and procedures.

Responsibilities include complete financial control of expenditures, budget preparations, purchasing of supplies and equipment, preparation of payrolls and time reports, personnel matters, deposits and control of departmental receipts, assisting in administering federal grants, contracts, and other related duties.

This office is also responsible for the licensing of all retail establishments selling oleo, milk, meat, and Class "C" pesticides in Vermont. Approximately two thousand licenses are issued annually.

Vermont Department of Agriculture

Appropriations and Expenditures Fiscal Year 1987

	ADJUSTED APPROPRIATION	EXPENDED	BALANCE
ADMINISTRATION			
Personal Services	$313,050.00	$312,331.51	$ 718.49
Operating Expenses	63,662.00	63,228.37	433.63
Receipts	(18,150.00)	(18,248.78)	(1.22)
TOTALS	$358,462.00	$357,311.10	$ 1,150.90
LIVESTOCK			
Personal Services	$324,400.00	$324,304.94	$ 95.06
Operating Expenses	63,700.00	63,333.84	366.16
Grants	7,030.96	750.00	6,280.96
TOTALS	$395,130.96	$388,388.78	$ 6,742.18
MEAT/POULTRY INSPECTION			
Personal Services	$393,700.00	$372,834.12	$ 20,865.88
Operating Expenses	78,400.00	71,197.04	7,202.96
Receipts	(318,000.00)	(290,477.89)	(27,522.11)
TOTALS	$154,100.00	$153,553.27	$ 546.73

DAIRY MARKETS DEVELOPMENT			
Personal Services	$ 57,300.00	$ 57,013.69	$ 286.31
Operating Expenses	17,600.00	17,518.48	81.52
Receipts	(40,500.00)	(14,125.00)	(3,625.00)
TOTALS	$ 34,400.00	$ 30,407.17	$ 3,992.83
DAIRY			
Personal Services	$358,249.00	$358,069.21	$ 179.79
Operating Expenses	84,900.00	84,193.52	706.48
Receipts	(32,349.00)	(32,170.60)	(178.40)
TOTALS	$410,800.00	$410,092.13	$ 707.87
PLANT INDUSTRY			
Personal Services	$368,400.00	$354,629.05	$ 13,770.95
Operating Expenses	71,500.00	71,101.13	398.87
Receipts	(182,400.00)	(168,545.62)	(13,854.38)
TOTALS	$257,500.00	$257,184.56	$ 315.44
WEIGHTS, MEASURES & RETAIL INSPECTION			
Personal Services	$290,700.00	$290,063.52	$ 636.48
Operating Expenses	64,400.00	63,977.12	422.88
Receipts	(44,000.00)	$(43,736.83)	(263.17)
TOTALS	$311,100.00	$310,303.81	$ 796.19
AGRICULTURAL DEVELOPMENT			
Personal Services	$159,800.00	$159,176.69	$ 623.31
Operating Expenses	58,880.00	58,799.14	80.86
Other	18,797.12	183,797.12	-0-
Receipts	(3,797.12)	(3,175.00)	(622.12)
TOTALS	$398,680.00	$398,597.95	$ 82.05
LABORATORIES			
Personal Services	$272,100.00	$250,678.90	$ 21,421.10
Operating Expenses	121,800.00	121,546.85	253.15
Receipts	(202,500.00)	(183,638.68)	(18,861.32)
TOTALS	$191,400.00	$188,587.07	$ 2,812.93
STIPEND FUND	$ 90,000.00	$ 90,000.00	$ -0-
BREEDERS STAKE	$ 1.00	$ -0-	$ 1.00

Vermont Department of Agriculture

Appropriations and Expenditures Fiscal Year 1988

	Adjusted APPROPRIATION	EXPENDED	BALANCE
ADMINISTRATION			
Personal Services	$359,064.51	$358,587.95	$ 476.56
Operating Expenses	90,911.54	90,356.93	554.61
Receipts	(28,229.97)	(27,204.11)	(1,025.86)
TOTALS	$421,746.08	$421,740.77	$ 5.31

LIVESTOCK			
Personal Services	$309,700.00	$309,290.92	$ 409.08
Operating Expenses	71,000 00	70,977.93	22.07
Grants	6,780.96	600.00	5,680.96
TOTALS	$386,980.96	$380,868.85	$ 6,112.11
MEAT/POULTRY INSPECTION			
Personal Services	$434,650.00	$432,615.30	$ 2,034.70
Operating Expenses	78,900.00	76,911.34	1,988.66
Receipts	(337,800.00)	(333,780.26)	(4,019 74)
TOTALS	$175,750.00	$175,746.38	$ 3.62
DAIRY MARKETS DEVELOPMENT			
Personal Services	$ 61,700.00	$ 60,082.46	$ 1,617.54
Operating Expenses	17,800.00	17,314.04	485.96
Receipts	(42,900.00)	(40,800.00)	(2,100.00)
TOTALS	$ 36,600.00	$ 36,596.50	$ 3.50
DAIRY			
Personal Services	$380,326.00	$377,208.11	$ 3,117.89
Operating Expenses	69,800.00	68,681.20	1,118.80
Receipts	(32,000.00)	(27,763.44)	(4,236.56)
TOTALS	$418,126.00	$418,125.87	$ .13
PLANT INDUSTRY			
Personal Services	$389,130.09	$383,478.07	$ 5,652.02
Operating Expenses	86,400.00	77,333.54	9,066.46
Grants	25,000.00	23,955.00	1,045.00
Receipts	(206,300.00)	(190,598.18)	(15,701.82)
TOTALS	$294,230.09	$294,168.43	$ 61.66
WEIGHTS, MEASURES & RETAIL INSPECTION			
Personal Services	$299,001.42	$298,902.32	$ 99.10
Operating Expenses	67,500.00	66,627.12	872.88
Receipts	(38,300.00)	(37,328.08)	(971.92)
TOTALS	$328,201.42	$328,201.36	$ .06
AGRICULTURAL DEVELOPMENT			
Personal Services	$176,500.00	$176,249.61	$ 250.39
Operating Expenses	47,200.00	46,860.34	339.66
Other	200,000.00	199,180.27	819.73
Receipts	(20,000.00)	(18,598.22)	(1,402.00)
TOTALS	$403,700.00	$403,692.22	$ 7.78
LABORATORIES			
Personal Services	$286,900.00	$284,091.54	$ 2,808.46
Operating Expenses	184,500.00	172,386.07	12,113.93
Receipts	(262,100.00)	(248,700.21)	(13,399.79)
TOTALS	$209,300.00	$207,777.40	$ 1,522.60
STIPEND FUND	$ 90,000.00	$ 90,000.00	$ -0-
BREEDERS STAKE	$ 25,001.00	$ 25,000.00	$ 1.00

Federal and Special Funds - FY 1987

FEDERAL AND SPECIAL FUNDS	BALANCE FORWARD AND RECEIPTS	EXPENDED	BALANCE
Agriview Publication	$ 14,687.86	$ 12,998.50	$ 1,689.36
Meat Inspection - Federal	$ 313,837.88	$ 290,477.89	$ 23,359.99
Dairy Markets Development	$ 8,750.00	$ 5,000.00	$ 3,750.00
Federal/State Inspection of Dairy Products	$ 14,620.57	$ 14,508.14	$ 112.43
State Dairy Council	$ 173,270.88	$ 152,279.71	$ 20,991.17
Vt. Dairy Industry Council	$1,783,051.59	$1,783,051.59	$ -0-
Lab Testing	$ 21,330.41	$ 8,199.45	$ 13,130.96
Pesticide Enforcement '85 - Fed.	$ 1,762.62	$ -0-	$ 1,762.62
Pesticide Enforcement '86 - Fed.	$ 63,909.45	$ 63,581.62	$ 327.83
Pesticide Enforcement '87 - Fed.	$ 56,000.00	$ 54,207.01	$ 1,792.99
Pesticide Certification '84 - Fed.	$ 4,117.46	$ -0-	$ 4,117.46
Pesticide Certification '85 - Fed.	$ 4,984.33	$ 4,491.00	$ 493.33
Pesticide Certification '86 - Fed.	$ 13,819.93	$ 9,061.68	$ 4,758.25
Pesticide Certification '87 - Fed.	$ 14,942.00	$ 11,322.71	$ 3,619.29
Feed, Seed, & Fertilizer	$ 317,199.18	$ 148,562.32	$168,636.86
Pesticide Monitoring	$ 119,254.75	$ 56,550.43	$ 62,704.32
Federal Egg Inspection	$ 26,243.57	$ 25,236.83	$ 1,006.74
Vt. Products Identification	$ 17,313.75	$ 3,547.58	$ 13,766.17
Apple Marketing Board	$ 85,272.10	$ 38,416.58	$ 46,855.52
Vt. Rehab. Corp.	$ 5,250.28	$ 5,250.28	$ -0-
Plant Pest Survey '86	$ 24,000.00	$ 24,017.11	$ (17.11)

Federal and Special Funds FY 1988

FEDERAL AND SPECIAL FUNDS	BALANCE FORWARD AND RECEIPTS	EXPENDED	BALANCE
Agriview Publication	$ 13,660.67	$ 12,652.86	$ 1,007.81
Meat Inspection - Federal	$ 414,493.50	$ 350,050.54	$ 64,442.96
Dairy Markets Development	$ 6,250.00	$ 5,000.00	$ 1,250.00
Federal/State Inspection of Dairy Products	$ 5,578.65	$ 3,918.86	$ 1,659.79

State Dairy Council	$ 204,078.84	$ 183,523.80	$ 20,555.04
Vt. Dairy Industry Council	$2,305,214.86	$2,306,764.86	$ (1,550.00)
Lab Testing	$ 31,489.06	$ 19,886.13	$ 11,602.93
Pesticide Enforcement '85 - Fed.	$ 1,762.62	$ -0-	$ 1,762.62
Pesticide Enforcement '86 - Fed.	$ 327.83	$ -0-	$ 327.83
Pesticide Enforcement '87 - Fed.	$ 42,350.99	$ 35,235.14	$ 7,115.85
Pesticide Certification '84 - Fed.	$ 4,117.46	$ -0-	$ 4,117.46
Pesticide Certification '85 - Fed.	$ 493.33	-0-	$ 493.33
Pesticide Certification '86 - Fed.	$ 34.25	$ 34.25	$ (-0-)
Pesticide Certification '87 - Fed.	$ 4,479.29	$ 2,982.92	$ 1,496.37
Pesticide Certification '88 - Fed.	$ 12,440.00	$ 21,338.40	$ (8,898.40)
Feed, Seed, Fertilizer	$ 416,398.36	$ 218,793.81	$197,604.75
Pesticide Monitoring	$ 238,649.32	$ 90,477.12	$148,172.20
Federal Egg Inspection	$ 26,625.70	$ 24,198.28	$ 2,427.42
Vt. Products Identification (Seal of Quality)	$ 18,217.97	$ 5,546.79	$ 12,671.18
Apple Marketing Board	$ 92,058.90	$ 80,455.60	$ 11,603.30
Dairy Industry Stabilization Fund	$ 11,250.00	$ 838.84	$ 10,411.16
Agriculture - Tourism Grant	$ 37,500.00	$ 11,321.25	$ 26,178.75
Weights & Measures - Testing	$ 18,000.98	$ 13,129.80	$ 4,871.18

Department of Agriculture Receipts - Fiscal Years 1987/88

General Fund Receipts

	1987 RECEIPTS	1988 RECEIPTS
ADMINISTRATION		
Sales of Service	$ 490.00	$ 383.00
Sales	$ 222.00	$ 136.00
LIVESTOCK		
Livestock Dealers Licenses	$ 3,446.00	$ 2,646.00
Swine Garbage Licenses	$ 12.00	$ 12.00
animal Welfare Licenses	$ 360.00	$ 565.00
MEAT INSPECTION		
Meat Handlers Licenses	$ 6,900.00	$ 6,664.00
DAIRY		
Milk handlers Licenses	$ 3,612.00	$ 2,750.00
Milk & Cream Testers Licenses	$ 1,307.00	$ 1,079.00
Oleomargarine Licenses	$ 15,435.00	$ 16,071.00

Warehouse Licenses	$ 240.00	$ 420.00
Frozen Dessert Licenses	$ 4,386.00	$ 4,862.00
Imitation Dairy Products Handlers Licenses	$ 125.00	$ 175.00
LABORATORIES		
Laboratory Fees	----------	----------
PLANT INDUSTRY		
Pesticide Registrations	$ 55,990.00	$ 58,815.00
Pesticide Dealers & Applicators Licenses & Certificates	$ 18,055.00	$ 17,750.00
WEIGHTS, MEASURES, & RETAIL INSPECTION		
Dealers/Repairmen's Licenses	$ 2,220.00	$ 1,152.00
Weighmasters Licenses	$ 1,420.00	$ 1,528.00
AGRICULTURAL DEVELOPMENT		
Egg Buyers Licenses	$ 33.00	$ 38.00
Fees - Bureau of Markets	$ 3,640.00	$ 5,217.00
TOTAL GENERAL FUND	$117,893.00	$120,263.00

Department of Agriculture Receipts - Fiscal Years 1987/88

FEDERAL AND SPECIAL FUNDS RECEIPTS

	1987 RECEIPTS	1988 RECEIPTS
ADMINISTRATION		
Agriculture & Tourism	$ -0-	$ 37,500.00
Sale of Surplus Property	$ 350.00	$ 10,092.00
Agriview Publication	$ 12,205.00	$ 11,971.00
MEAT INSPECTION		
Federal Meat Inspection	$ 313,643.00	$ 391,134.00
DAIRY		
State Dairy Council Taxes	$ 155,132.00	$ 178,436.00
Vermont Dairy Industry Council	$1,783,051.00	$2,305,215.00
Milk Control Board Licenses	$ 4,736.00	$ 4,652.00
Inspection of Dairy Products - Federal	$ 9,541.00	$ 5,466.00
DAIRY MARKETS DEVELOPMENT		
Dairy Markets Development	$ 5,000.00	$ 2,500.00
PLANT INDUSTRY		
Federal Pesticide Certification '86	$ 14,140.00	$ (4,724.00)
Federal Pesticide Certification '87	$ 14,942.00	$ 860.00
Federal Pesticide Certification '88	$ -0-	$ 12,440.00
Federal Pesticide Enforcement '86	$ 65,546.00	$ -0-
Federal Pesticide Enforcement '87	$ 56,000.00	$ 40,558.00
Federal Pesticide Enforcement '88	$ -0-	$ 83,279.00

Feed, Seed, & Fertilizer	$ 183,144.00	$ 247,761.00
Pesticide Monitoring	$ 83,785.00	$ 175,945.00
Plant Pest Survey '86	$ 12,000.00	$ -0-
LABORATORIES		
Laboratory Testing	$ 10,524.00	$ 16,396.00
Milk Quality Testing	$ 2,462.00	$ 1,962.00
WEIGHTS & MEASURES		
Federal Egg Inspection	$ 21,665.00	$ 25,619.00
Agricultural Testing Fees	$ -0-	$ 18,001.00
AGRICULTURAL DEVELOPMENT		
Apple Marketing Board	$ 64,298.00	$ 41,513.00
Vt. products identification - Fees	$ 2,850.00	$ 2,940.00
Vt. Products Identification - Labels	$ 1,056.00	$ 1,512.00
TOTAL FEDERAL & SPECIAL FUNDS	$2,816.070.00	$3,611,028.00

Picking strawberries on the Fred McNeil Farm in Vergennes, c. 1898. Photo courtesy of Vermont Historical Society

VERMONT AGRICULTURAL STATISTICS

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D A I R Y H I G H L I G H T S

PRODUCTION AND MARKETINGS

Milk production on Vermont farms totaled 2.39 billion pounds in 1988, 23 million pounds less than 1987. The average number of milk cows during 1988 was a record low of 169,000 head, down 5,000 head from 1987. The 1988 record high rate per cow of 14,124 pounds continues the long term upward trend with an increase of 273 pounds above the 1987 average.

Dairymen in Vermont used 24 million pounds of milk to feed calves and 10 million pounds for home use in 1988. The amount fed to calves was down 2 million pounds from previous year and the amount used for home use was 1 million pounds less than a year ago. Milk marketed in 1988 totaled 2,353 million pounds, a decrease of 20 million pounds from 1987. The average price received for milk marketed in 1988 was $12.82 per cwt., down 40 cents from the 1987 average. The 1988 cash receipts totaled $302 million, down $12.0 million from 1987 due to both the decrease in quantity of milk sold and the average price received per cwt.

MILK: PRODUCTION AND VALUE, VERMONT, 1978 - 1988

YEAR	AVERAGE NUMBER OF MILK COWS	PRODUCTION					VALUE OF MILK PRODUCED
		PER MILK COW		PERCENTAGE OF FAT IN ALL MILK PRODUCED	TOTAL		
		MILK	MILKFAT		MILK	MILKFAT	
	1,000	Pounds		Percent	Million Pounds		1,000 Dollars
1978	186	11,484	424	3.69	2,136	79	239,659
1979	183	11,907	437	3.67	2,179	80	272,700
1980	186	12,306	449	3.65	2,289	84	307,252
1981	187	12,289	450	3.66	2,298	84	329,141
1982	192	12,422	455	3.67	2,385	88	336,799
1983	193	12,902	479	3.71	2,490	92	353,885
1984	183	12,628	471	3.73	2,311	86	323,851
1985	183	13,169	491	3.73	2,410	90	320,877
1986	181	13,525	506	3.74	2,448	92	321,054
1987	174	13,851	517	3.73	2,410	90	318,497
1988	169	14,124	531	3.76	2,387	90	305,939

MILK COWS: AVERAGE NUMBER ON FARMS, BY MONTHS AND ANNUAL, VERMONT, 1978 - 1988

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
						1,000							
1978	194	190	188	185	182	182	182	185	185	185	187	188	186
1979	188	186	184	182	180	180	181	182	183	184	185	186	183
1980	187	186	186	185	185	185	185	186	187	188	188	188	186
1981	188	188	186	186	185	185	185	186	186	188	190	190	187
1982	192	193	193	190	190	189	190	191	191	193	194	194	192
1983	194	193	194	193	191	191	191	193	194	197	191	188	193
1984	186	184	180	182	179	180	180	182	185	185	186	186	183
1985	185	184	182	182	179	180	180	184	185	186	186	186	183
1986	185	184	184	183	183	180	178	177	179	180	179	178	181
1987	178	176	175	175	175	175	175	175	174	172	170	170	174
1988	170	170	170	169	169	169	168	168	169	170	170	170	169

MILK PRODUCTION: AVERAGE PER COW, BY MONTHS AND ANNUAL, VERMONT, 1978 - 1988

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
						Pounds							
1978	890	820	980	1,010	1,080	1,070	1,010	970	930	930	870	925	11,484
1979	930	870	980	1,020	1,100	1,080	1,010	990	980	990	950	990	11,907
1980	985	940	1,045	1,060	1,125	1,110	1,065	1,040	1,000	1,005	940	980	12,306
1981	995	920	1,060	1,070	1,145	1,105	1,060	1,045	1,010	985	930	980	12,289
1982	1,010	910	1,050	1,050	1,120	1,110	1,050	1,040	1,030	1,050	1,000	1,030	12,422
1983	1,095	1,000	1,135	1,100	1,150	1,105	1,075	1,050	1,035	1,050	1,030	1,110	12,902
1984	1,080	1,010	1,115	1,080	1,135	1,070	1,030	1,015	1,000	1,040	995	1,065	12,628
1985	1,080	1,000	1,120	1,100	1,175	1,135	1,090	1,080	1,065	1,115	1,070	1,130	13,169
1986	1,160	1,055	1,170	1,155	1,215	1,135	1,110	1,125	1,095	1,110	1,065	1,140	13,525
1987	1,150	1,060	1,195	1,180	1,250	1,170	1,130	1,140	1,090	1,150	1,130	1,190	13,851
1988	1,205	1,135	1,230	1,200	1,260	1,200	1,165	1,150	1,130	1,140	1,100	1,175	14,124

MILK PRODUCTION: TOTAL, BY MONTHS AND ANNUAL, VERMONT, 1978 - 1988

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
						Million Pounds							
1978	173	156	184	187	197	195	184	179	172	172	163	174	2,136
1979	175	162	180	186	198	194	183	180	179	182	176	184	2,179
1980	184	175	194	196	208	205	197	193	187	189	177	184	2,289
1981	187	173	197	199	212	204	196	194	188	185	177	186	2,298
1982	194	176	203	199	213	210	200	198	196	202	194	200	2,385
1983	212	193	220	212	220	211	205	203	201	207	197	209	2,490
1984	201	186	201	197	203	193	185	185	185	192	185	198	2,311
1985	200	184	204	200	210	204	196	199	197	207	199	210	2,410
1986	215	194	215	211	222	204	198	199	196	200	191	203	2,448
1987	205	187	209	207	219	205	198	200	190	198	190	202	2,410
1988	205	193	209	203	213	203	196	193	191	194	187	200	2,387

MILK: QUANTITY MARKETED, PRICE AND CASH RECEIPTS, VERMONT, 1978 - 1988

YEAR	SOLD TO PLANTS			SOLD DIRECTLY TO CONSUMERS			COMBINED MARKETINGS		
	QUANTITY	PRICE PER CWT.	CASH RECEIPTS	QUANTITY	PRICE PER QUART	CASH RECEIPTS	QUANTITY	PRICE PER CWT.	CASH RECEIPTS
	Million Pounds	Dollars	1,000 Dollars	Million Quarts	Cents	1,000 Dollars	Million Pounds	Dollars	1,000 Dollars
1978	2,090	11.20	234,080	1.9	41	763	2,094	11.22	234,843
1979	2,130	12.50	266,250	1.9	44	819	2,134	12.51	267,069
1980	2,240	13.40	300,160	2.3	51	1,186	2,245	13.42	301,346
1981	2,250	14.30	321,750	2.3	53	1,233	2,255	14.32	322,983
1982	2,335	14.10	329,235	2.3	52	1,209	2,340	14.12	330,444
1983	2,445	14.20	347,190	1.4	52	726	2,448	14.21	347,916
1984	2,265	14.00	317,100	1.4	52	726	2,268	14.01	317,826
1985	2,365	13.30	314,545	1.4	53	740	2,368	13.31	315,285
1986	2,405	13.10	315,055	1.4	54	753	2,408	13.11	315,808
1987	2,370	13.20	312,840	1.4	55	767	2,373	13.22	313,607
1988	2,350	12.80	300,800	1.4	56	781	2,353	12.82	301,581

MILK: QUANTITIES USED AND MARKETED BY FARMERS, VERMONT, 1978 - 1988

YEAR	TOTAL PRODUCED	MILK, USED ON FARMS WHERE PRODUCED			MILK MARKETED BY FARMERS		
		USED FOR MILK, CREAM AND BUTTER	FED TO CALVES	TOTAL	SOLD TO PLANTS AND DEALERS	SOLD DIRECTLY TO CONSUMERS	TOTAL
	Million Pounds						
1978	2,136	18	24	42	2,090	4	2,094
1979	2,179	19	26	45	2,130	4	2,134
1980	2,289	17	27	44	2,240	5	2,245
1981	2,298	14	29	43	2,250	5	2,255
1982	2,385	13	32	45	2,335	5	2,340
1983	2,490	12	30	42	2,445	3	2,448
1984	2,311	12	31	43	2,265	3	2,268
1985	2,410	12	30	42	2,365	3	2,368
1986	2,448	12	28	40	2,405	3	2,408
1987	2,410	11	26	37	2,370	3	2,373
1988	2,387	10	24	34	2,350	3	2,353

MILK SOLD TO PLANTS: MONTHLY AND ANNUAL AVERAGE PRICE PER 100 POUNDS RECEIVED BY FARMERS, VERMONT, 1978 - 1988

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
	Dollars												
1978	10.80	10.90	10.60	10.40	10.40	10.30	10.80	11.40	11.90	12.40	12.60	12.30	11.20
1979	12.40	12.40	12.20	11.90	11.80	11.70	12.10	12.80	13.20	12.50	13.60	13.20	12.50
1980	13.10	13.10	13.00	12.80	12.70	12.50	13.00	13.50	14.00	14.50	14.50	14.50	13.40
1981	14.50	14.40	14.20	14.00	13.80	13.60	14.00	14.40	14.70	15.00	14.80	14.50	14.30
1982	14.40	14.30	14.00	13.80	13.50	13.30	13.80	14.20	14.50	14.70	14.70	14.40	14.10
1983	14.40	14.40	14.00	13.90	13.60	13.50	13.90	14.30	14.60	14.70	14.80	14.30	14.20
1984	14.10	13.80	13.70	13.40	13.30	13.20	13.60	14.10	14.60	14.90	15.00	14.50	14.00
1985	14.40	14.20	13.70	13.30	12.90	12.40	12.80	13.00	13.20	13.40	13.30	13.00	13.30
1986	13.00	12.90	12.50	12.30	12.30	12.10	12.70	13.20	13.70	14.10	14.20	14.00	13.10
1987	13.90	13.60	13.10	12.60	12.30	12.20	12.70	13.20	13.60	13.90	13.80	13.30	13.20
1988	13.10	12.80	12.40	12.00	11.70	11.50	12.10	12.80	13.40	14.00	14.30	14.20	12.80

LIVESTOCK HIGHLIGHTS

INVENTORY

The inventory of cattle and calves in Vermont on January 1, 1989 totaled 297,000 head, unchanged from the record low January 1, 1988. This inventory consisted of 170,000 milk cows, 12,000 beef cows, 58,000 heifers 500 pounds and over, 7,000 steers and bulls, and 50,000 calves. The 1988 calf crop (calves born) of 181,000 head was 13 percent higher than in 1987. The inventory value on January 1, 1989 averaged $700 per head, $60 more than January 1, 1988 but $170 lower than the record high of January 1, 1981. The increase in average value per head caused the inventory value to increase to $208 million, 9 percent more than in the previous year but 29 percent lower than the record high total inventory value on January 1, 1982.

The number of sheep and lambs on hand January 1, 1989 totaled 17,000, up 3,000 from a year earlier. At an average value of $88.00 per head, total value of the inventory was $1.5 million at the beginning of 1989, up 27 percent from 1988. There were 15,000 lambs born in the state during 1988, up 2,000 from the 1987 number.

Hogs and pigs in the state on December 1, 1988 numbered 6,000 head, 2 percent above the number on hand December 1, 1987. Breeding numbers at 900 head were unchanged from last December; however, pigs held for market increased 100 head. Total inventory was valued at $651,000 bringing the average to $108.50 per head, up from $104.50 per head on December 1, 1987. The Vermont pig crop numbered 11,800 head in 1988, 800 more than a year earlier. The increase was caused by a higher Fall litter rate.

PRODUCTION AND MARKETINGS:

The 1988 marketings of cattle and calves numbered 161,000 head, with a total live weight of 69.0 million pounds, down 36.6 million pounds from last year. The number of cattle marketed was down 36,000 head from a year ago, while calf marketings increased by 27,000 head. Farmers received an average price of $58.00 and $70.00 per cwt. for cattle and calves respectively during 1988. Both cattle and calf prices were up $8.00 per cwt. from previous year.

Wool production totaled 98,000 pounds during 1988, up 10 percent from the preceding year. There were 14,000 sheep shorn during 1988, compared with 12,000 in 1987. At 82 cents per pound, the wool produced in 1988 had an aggregate value of $80,000. At 71 cents per pound, the 1987 production was valued at $63,000. Production of lamb and mutton totaled 1.3 million pounds live weight in 1988, up 26 percent from a year earlier. Marketings in 1988 of 897,000 pounds were 19 percent lower than in the preceding year. Gross income from marketings was $722,000 in 1988, down 17 percent from 1987.

Vermont pork producers marketed nearly 2.5 million pounds of pork in 1988, a 9 percent increase from 1987. However, gross income dropped 10 percent, due to an $8 per cwt. decrease in the average price received. Producers received an average price of $41 per cwt. in 1988.

CATTLE: NUMBER AND VALUE OF ALL CATTLE AND CALVES ON FARMS JANUARY 1, VERMONT, 1978 - 1989

YEAR	NUMBER	VALUE	
		PER HEAD	TOTAL
	1,000	Dollars	1,000 Dollars
1978	336	400	134,400
1979	329	590	194,110
1980	340	760	258,400
1981	337	870	293,190
1982	360	815	293,400
1983	379	700	265,300
1984	360	610	219,600
1985	350	585	204,750
1986	350	570	199,500
1987	325	610	198,250
1988	297	640	190,080
1989	297	700	207,900

CATTLE: JANUARY 1, INVENTORY BY CLASSES, VERMONT 1978 - 1989

YEAR	ALL CATTLE AND CALVES	COWS & HEIFERS THAT HAVE CALVED		HEIFERS 500 LBS. & OVER			STEERS 500 LBS.+	BULLS 500 LBS.+	STEERS, HEIFERS & BULLS -500 LBS.
				REPLACEMENTS		OTHER			
		BEEF	MILK	BEEF COW	MILK COW				
				1,000					
1978	336	13	194	3	61	3	3	5	54
1979	329	11	188	3	62	3	3	4	55
1980	340	13	187	3	68	2	3	4	60
1981	337	11	188	2	69	1	2	3	61
1982	360	12	190	4	77	2	4	4	67
1983	379	10	194	3	92	1	3	3	73
1984	360	14	190	3	74	1	4	4	70
1985	350	10	186	3	73	2	4	4	68
1986	350	10	186	3	73	2	4	4	68
1987	325	12	178	3	63	1	4	4	60
1988	297	9	170	2	52	1	4	3	56
1989	297	12	170	2	53	3	4	3	50

CATTLE AND CALVES: INVENTORY, SUPPLY AND DISPOSITION, VERMONT, 1978 - 1988

YEAR	ALL CATTLE ON HAND JAN. 1	CALF CROP	INSHIPMENTS	MARKETINGS		FARM SLAUGHTER	DEATHS	
				CATTLE	CALVES	CATTLE & CALVES	CATTLE	CALVES
				1,000				
1978	336	175	9	97	74	2	4	14
1979	329	184	5	79	76	2	5	16
1980	340	180	5	58	99	4	7	20
1981	337	180	14	46	93	3	9	20
1982	360	190	27	68	87	3	10	30
1983	379	185	10	88	91	2	10	23
1984	360	187	14	82	98	3	8	20
1985	350	195	14	53	123	3	8	22
1986	350	183	14	64	123	3	9	23
1987	325	160	14	87	83	3	9	20
1988	297	181	14	51	110	3	11	20

CATTLE AND CALVES: PRODUCTION AND INCOME, VERMONT, 1978 - 1988

YEAR	PRODUCTION	MARKETINGS	PRICE PER 100 POUNDS		VALUE OF HOME CONSUMPTION	GROSS INCOME
			CATTLE	CALVES		
	1,000 Pounds		Dollars		1,000 Dollars	
1978	93,985	106,485	40.40	56.00	1,551	45,581
1979	94,758	91,048	57.00	76.00	1,642	54,810
1980	66,063	68,173	58.00	72.00	3,341	44,087
1981	66,800	53,320	53.00	57.00	3,053	31,610
1982	85,200	81,210	46.00	54.00	2,853	40,742
1983	86,110	106,960	41.00	47.00	2,151	46,423
1984	87,840	100,510	43.00	48.00	3,640	47,133
1985	66,270	71,210	40.00	45.00	2,967	32,174
1986	59,500	85,580	41.00	48.00	2,562	38,835
1987	76,170	105,580	50.00	62.00	3,216	57,364
1988	67,260	69,000	58.00	70.00	3,749	45,580

HOGS: NUMBER AND VALUE ON FARMS, DECEMBER 1, VERMONT, 1977 - 1988

YEAR	NUMBER			VALUE	
	BREEDING	MARKET	TOTAL	PER HEAD	TOTAL
	Head			Dollars	1,000 Dollars
1977	1,600	5,400	7,000	75.50	529
1978	1,300	5,000	6,300	86.00	542
1979	1,700	6,800	8,500	63.00	536
1980	2,400	5,600	8,000	86.00	688
1981	2,700	6,300	9,000	89.00	801
1982	1,700	6,200	7,900	79.50	628
1983	1,600	6,300	7,900	79.00	624
1984	1,200	5,600	6,800	74.50	507
1985	1,000	5,400	6,400	78.00	499
1986	900	4,900	5,800	95.00	551
1987	900	5,000	5,900	104.50	617
1988	900	5,100	6,000	108.50	651

HOGS: PIG CROP, SOWS FARROWED AND PIGS SAVED, VERMONT, 1978 - 1988

YEAR	SPRING CROP (DEC - MAY)			FALL CROP (JUN - NOV)			TOTAL PIG CROP
	SOWS	PIGS / LITTER	PIGS SAVED	SOWS	PIGS / LITTER	PIGS SAVED	
	Head						
1978	600	7.3	4,400	700	7.2	5,000	9,400
1979	900	7.8	7,000	1,000	7.5	7,500	14,500
1980	2,500	7.2	18,000	2,700	6.7	18,000	36,000
1981	2,000	7.5	15,000	1,400	7.5	11,000	26,000
1982	1,600	8.3	13,000	1,400	7.5	11,000	24,000
1983	1,100	7.4	8,100	1,100	8.3	9,100	17,200
1984	800	8.5	6,800	900	7.2	6,500	13,300
1985	900	6.2	5,600	800	7.6	6,100	11,700
1986	800	7.4	5,900	800	7.0	5,600	11,500
1987	800	6.6	5,300	800	7.1	5,700	11,000
1988	800	6.8	5,400	800	8.0	6,400	11,800

HOGS: INVENTORY NUMBERS, PIG CROP AND DISPOSITION, VERMONT, 1978 - 1988

YEAR	ON HAND DEC 1st PREVIOUS YEAR	PIG CROP DEC - MAY	PIG CROP JUN - NOV	MARKETINGS	FARM SLAUGHTER	DEATHS
			Head			
1978	7,000	4,400	5,000	9,100	600	400
1979	6,300	7,000	7,500	10,900	1,000	400
1980	8,500	18,000	18,000	32,100	3,000	1,400
1981	8,000	15,000	11,000	21,000	3,000	1,000
1982	9,000	13,000	11,000	22,900	1,200	1,000
1983	7,900	8,100	9,100	14,300	2,600	300
1984	7,900	6,800	6,500	13,000	1,100	300
1985	6,800	5,600	6,100	9,500	2,000	600
1986	6,400	5,900	5,600	9,300	2,000	800
1987	5,800	5,300	5,700	8,100	2,000	800
1988	5,900	5,400	6,400	8,900	2,000	800

HOGS: PRODUCTION AND INCOME, VERMONT, 1978 - 1988

YEAR	PRODUCTION	MARKETINGS	PRICE PER 100 POUNDS	VALUE OF HOME CONSUMPTION	GROSS INCOME
	1,000 Pounds		Dollars	1,000 Dollars	
1978	2,882	2,555	45.00	246	1,396
1979	4,019	2,784	44.00	400	1,625
1980	10,939	9,025	37.00	664	4,003
1981	7,096	4,965	43.00	839	2,974
1982	6,945	6,413	54.00	539	4,002
1983	5,179	3,689	42.00	596	2,145
1984	4,044	3,458	46.00	395	1,986
1985	3,358	2,555	41.00	373	1,421
1986	3,532	2,623	46.00	359	1,566
1987	3,059	2,271	49.00	382	1,495
1988	3,139	2,510	41.00	320	1,349

SHEEP AND LAMBS: INVENTORY NUMBER BY CLASS AND VALUE, JANUARY 1, VERMONT, 1978 - 1989

YEAR	LAMBS			ONE YEAR AND OVER		ALL SHEEP & LAMBS	VALUE	
	ALL LAMBS	EWES	WETHERS AND RAMS	EWES	WETHERS AND RAMS		PER HEAD	TOTAL
	Head						Dollars	1,000 Dollars
1978	1,900	1,300	600	5,600	400	7,900	48.00	379
1979	2,000	1,400	600	5,600	400	8,000	57.00	456
1980	3,500	3,000	500	8,000	500	12,000	75.50	906
1981	3,600	3,000	600	8,000	400	12,000	89.00	1,068
1982	4,000	3,000	1,000	11,000	1,000	16,000	96.50	1,544
1983	3,000	2,000	1,000	10,000	1,000	14,000	93.50	1,309
1984	4,000	3,000	1,000	9,000	1,000	14,000	79.50	1,113
1985	4,000	3,000	1,000	10,000	1,000	15,000	103.00	1,545
1986	3,000	2,000	1,000	9,000	1,000	13,000	103.00	1,339
1987	3,900	2,500	1,400	11,000	1,000	16,000	93.50	1,496
1988	3,600	2,500	1,100	9,700	700	14,000	84.00	1,176
1989	5,000	2,800	2,200	11,300	700	17,000	88.00	1,496

SHEEP AND LAMBS: INVENTORY NUMBERS, LAMB CROP AND DISPOSITION, VERMONT, 1978 - 1988

YEAR	ALL SHEEP AND LAMBS ON HAND JAN. 1	LAMB CROP	MARKETINGS		FARM SLAUGHTER SHEEP & LAMBS	DEATHS SHEEP & LAMBS
			SHEEP	LAMBS		
	Head					
1978	7,900	6,700	1,500	3,100	800	1,200
1979	8,000	7,000	1,100	2,400	500	1,000
1980	12,000	10,000	3,200	4,700	700	1,400
1981	12,000	10,000	1,600	4,000	800	1,800
1982	16,000	13,000	4,500	7,800	800	1,900
1983	14,000	12,000	3,500	6,200	600	1,700
1984	14,000	14,000	2,200	8,300	300	2,200
1985	15,000	13,000	4,600	8,400	400	1,600
1986	13,000	15,000	400	9,500	400	1,700
1987	16,000	13,000	5,100	7,000	900	2,000
1988	14,000	15,000	1,700	8,200	500	1,600

SHEEP AND LAMBS: PRODUCTION AND INCOME, VERMONT, 1978 - 1988

YEAR	PRODUCTION	MARKETINGS	PRICE PER 100 POUNDS		VALUE OF HOME CONSUMPTION	GROSS INCOME
			SHEEP	LAMBS		
	1,000 Pounds		Dollars		1,000 Dollars	
1978	542	398	35.00	80.00	109	336
1979	666	258	36.00	81.00	114	256
1980	868	709	43.00	76.00	127	524
1981	884	415	32.00	78.00	110	335
1982	809	817	35.00	77.00	155	582
1983	1,066	998	33.00	87.00	94	726
1984	1,257	1,005	36.00	88.00	103	844
1985	1,217	1,335	40.00	90.00	96	1,010
1986	1,395	860	41.00	90.00	145	896
1987	1,073	1,114	39.00	87.00	204	868
1988	1,349	897	34.00	83.00	81	722

WOOL: PRODUCTION AND VALUE, VERMONT, 1978 - 1988

YEAR	SHEEP SHORN	WEIGHT PER FLEECE	SHORN WOOL PRODUCTION	PRICE PER POUND	VALUE
	Head	Pounds	1,000 Pounds	Cents	1,000 Dollars
1978	7,300	7.5	55	76	42
1979	7,500	7.2	54	85	46
1980	9,000	6.9	62	82	51
1981	14,000	7.4	104	84	87
1982	14,000	6.9	97	68	66
1983	13,000	6.9	90	60	54
1984	14,000	6.7	94	71	67
1985	13,000	6.9	90	66	59
1986	13,000	7.2	94	64	60
1987	12,000	7.4	89	71	63
1988	14,000	7.0	98	82	80

POULTRY HIGHLIGHTS

CHICKENS:

The total number of chickens as of December 1, 1988 was 209,000, a 26 percent decline from the 1987 number of 283,000. Hens and pullets comprised 76 percent of the total birds, the same as the previous year. Total value of chickens was $460,000, a sharp decline from $608,000 the previous year. Price per bird increased 5 cents from 1987 to $2.20.

EGGS:

In Vermont, laying flocks produced 54 million eggs during 1988, down from 60 million a year earlier. Daily rate of lay declined to 72.0 for 1988 from 73.4 for 1987. The average price per dozen of eggs was 94 cents, unchanged from the previous year. Egg production was valued at $4.2 million, compared to $4.7 million in 1987.

POULTRY: INVENTORY BY CLASS AND VALUE, VERMONT, DECEMBER 1, 1977 - 1988

YEAR	CHICKENS, EXCLUDING BROILERS				OTHER	TOTAL	VALUE PER HEAD	TOTAL VALUE
	HENS AND PULLETS OF LAYING AGE		PULLETS NOT OF LAYING AGE					
	HENS	PULLETS	3 MONTHS AND OLDER	UNDER 3 MONTHS				
	1,000						Dollars	1,000 Dollars
1977	167	323	30	72	6	598	2.35	1,405
1978	132	293	57	26	4	512	2.25	1,152
1979	143	267	44	49	3	506	2.30	1,164
1980	140	202	52	33	8	435	2.35	1,022
1981	149	165	62	37	12	425	2.45	1,041
1982	149	163	61	63	4	440	2.20	968
1983	62	178	41	40	4	325	2.40	780
1984	80	173	54	52	2	361	2.65	957
1985	101	119	53	25	2	300	2.70	810
1986	72	148	48	45	2	315	2.35	740
1987	99	116	27	38	3	283	2.15	608
1988	42	116	34	16	1	209	2.20	460

POULTRY: AVERAGE NUMBER OF LAYERS BY QUARTERS AND ANNUAL, VERMONT, 1978 - 1988

QUARTER	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
						1,000					
DEC-FEB 1/	478	421	397	336	318	311	239	257	218	222	213
MAR-MAY	450	413	383	322	308	268	236	255	212	226	210
JUN-AUG	438	364	416	329	290	228	238	246	207	228	209
SEP-NOV	434	365	395	329	293	233	247	232	214	221	184
ANNUAL	450	391	398	329	302	260	240	248	213	224	205

EGGS: DAILY RATE OF LAY BY QUARTERS AND ANNUAL, VERMONT, 1978 - 1988

QUARTER	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
						Percent					
DEC-FEB 1/	67.4	68.6	69.2	66.1	73.4	75.0	73.6	73.5	75.1	74.3	72.2
MAR-MAY	65.2	71.1	71.0	67.5	71.6	73.0	73.7	72.5	71.8	72.1	77.6
JUN-AUG	67.0	68.7	70.5	66.1	70.7	71.5	73.1	75.1	73.5	71.5	72.8
SEP-NOV	68.4	69.2	64.0	70.1	72.3	70.7	75.6	75.8	77.0	74.6	65.7
ANNUAL	67.0	69.4	68.6	67.4	71.8	72.6	74.2	74.0	73.3	73.4	72.0

EGGS: TOTAL PRODUCTION BY QUARTERS AND ANNUAL, VERMONT, 1978 - 1988

QUARTER	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
						Million					
DEC-FEB 1/	29	26	25	20	21	21	16	17	14	15	14
MAR-MAY	27	27	25	20	20	18	16	17	14	15	15
JUN-AUG	27	23	27	20	19	15	16	17	14	15	14
SEP-NOV	27	23	23	21	19	15	17	16	15	15	11
ANNUAL	110	99	100	81	79	69	65	67	57	60	54

1/ December previous year

CHICKENS: LOST, SOLD AND VALUE OF SALES, VERMONT, 1978 - 1988

YEAR	NUMBER LOST	SOLD		PRICE PER POUND	VALUE OF SALES
		NUMBER	LIVEWEIGHT		
	1,000		1,000 Pounds	Cents	1,000 Dollars
1978	48	395	2,054	12.3	258
1979	32	355	1,846	13.2	250
1980	29	350	1,820	8.3	155
1981	23	280	1,456	9.0	135
1982	20	220	1,144	8.0	95
1983	19	295	1,534	10.5	166
1984	22	152	790	16.5	141
1985	13	189	1,040	12.0	125
1986	15	191	1,012	9.0	91
1987	15	212	1,166	9.0	105
1988	11	158	790	5.0	40

EGGS: PRODUCTION AND VALUE, VERMONT, 1978 - 1988

YEAR	EGGS PRODUCED	PRICE PER DOZEN	VALUE OF PRODUCTION
	Million	Cents	1,000 Dollars
1978	110	75.9	6,958
1979	99	83.1	6,856
1980	100	84.6	7,050
1981	81	95.2	6,426
1982	79	93.0	6,123
1983	69	98.0	5,635
1984	65	107.0	5,796
1985	67	91.0	5,081
1986	57	93.0	4,418
1987	60	94.0	4,700
1988	54	94.0	4,230

HATCH: EGG-TYPE CHICKS BY COMMERCIAL HATCHERIES, NEW ENGLAND, 1981 - 1988

MONTH	1981	1982	1983	1984	1985	1986	1987	1988
				1,000				
JANUARY	1,767	1,102	1,626	1,911	1,670	1,700	1,075	1,111
FEBRUARY	1,837	1,230	1,370	1,828	1,580	1,456	1,080	1,222
MARCH	2,024	1,685	1,008	2,385	1,709	1,695	1,190	1,127
APRIL	2,060	2,015	1,947	2,299	2,137	1,664	1,945	1,216
MAY	1,954	2,221	2,018	1,981	1,858	1,803	1,542	1,407
JUNE	1,970	1,763	2,070	2,269	1,689	1,766	1,227	1,448
JULY	1,676	1,646	1,716	1,891	1,465	1,327	764	1,211
AUGUST	1,647	1,368	1,687	1,862	1,814	1,229	989	1,037
SEPTEMBER	1,748	1,426	1,894	1,613	1,635	1,464	1,405	763
OCTOBER	1,896	1,603	1,669	2,034	1,777	1,784	1,851	580
NOVEMBER	1,538	1,512	1,797	1,912	1,718	1,273	1,500	484
DECEMBER	1,467	1,740	2,094	1,909	1,732	1,737	1,539	358
ANNUAL	21,584	19,381	21,896	23,894	20,784	18,898	16,107	11,974

C R O P H I G H L I G H T S

HAY:

Vermont growers cut 771,000 tons of hay during 1988 from 405,000 acres. The 1988 production is the lowest production since 1977. The average yield of 1.90 tons per acre was 3 percent below the 1987 yield and 11 percent below 1986. Reduction of alfalfa acreage more than offset the increase in other hay. Alfalfa accounted for 30 percent of the total hay production. Dry conditions in June were ideal for harvesting the first cutting. Although the tonnage was down, the quality was good. Rains came in time for the second cutting but poor drying conditions hindered the harvest.

CORN SILAGE:

Corn silage production in Vermont totaled 1.4 million tons in 1988, below the 1987 output by 1 percent. The lower production was the result of a 1,000 acre reduction of land chopped for silage in 1988 as average yields equaled the 1987 level. The corn crop got off to a slow start with dry weather of June but July rains and hot and muggy August pushed the crop along. The killing frost held off, allowing the corn more time to mature. Harvest conditions were good to get the crop put up.

APPLES:

Commercial apple production in the state totaled 1.07 million bushels (42-pound units) in 1988, 2 percent more than the previous year. Dry conditions throughout the season hampered the crop, creating a small size but the quality was good. Hailstorms at various times during the season caused scattered damage to the crop leaving 47,000 bushels not utilized. The value of the 1988 crop totaled $7.9 million or an average of $7.40 per bushel compared with $7.6 million or $7.60 per bushel in 1987.

HAY: ALFALFA AND ALL OTHER, ACREAGE AND PRODUCTION, VERMONT, 1978 - 1988

YEAR	ALFALFA HAY			ALL OTHER HAY		
	ACRES HARVESTED	YIELD PER ACRE	PRODUCTION	ACRES HARVESTED	YIELD PER ACRE	PRODUCTION
	1,000	Tons	1,000 Tons	1,000	Tons	1,000 Tons
1978	100	2.55	255	345	1.85	638
1979	105	2.55	268	330	1.70	561
1980	110	2.25	248	333	1.85	616
1981	105	2.75	289	335	2.00	670
1982	110	2.70	297	335	1.90	637
1983	105	2.50	263	340	1.95	663
1984	115	2.50	288	325	2.00	650
1985	120	2.50	300	325	2.00	650
1986	115	2.50	288	325	2.00	650
1987	120	2.50	300	290	1.90	551
1988	105	2.20	231	300	1.80	540

HAY: ALL, ACREAGE, PRODUCTION AND VALUE, VERMONT, 1978 - 1988

YEAR	ACRES HARVESTED	YIELD PER ACRE	PRODUCTION	PRICE PER TON	VALUE OF PRODUCTION
	1,000	Tons	1,000 Tons	Dollars	1,000 Dollars
1978	445	2.01	893	65.00	58,045
1979	435	1.91	829	63.00	52,227
1980	443	1.95	864	63.00	54,432
1981	440	2.18	959	65.00	62,335
1982	445	2.10	934	84.00	78,456
1983	445	2.08	926	88.00	81,488
1984	440	2.13	938	84.00	78,792
1985	445	2.13	950	82.00	77,900
1986	440	2.13	938	76.00	71,288
1987	410	2.08	851	80.00	68,080
1988	405	1.90	771	90.00	69,390

CORN: ACREAGE, PRODUCTION AND VALUE, VERMONT, 1978 - 1988

YEAR	ACRES PLANTED FOR ALL PURPOSES	SILAGE			
		ACRES HARVESTED	YIELD PER ACRE	TOTAL PRODUCTION	VALUE OF PRODUCTION
	1,000		Tons	1,000 Tons	1,000 Dollars
1978	109	100	14.0	1,400	28,700
1979	108	99	15.0	1,470	34,545
1980	109	93	16.0	1,488	34,221
1981	110	92	16.0	1,472	33,414
1982	108	93	14.5	1,349	33,051
1983	108	94	14.5	1,363	34,348
1984	113	97	14.0	1,358	34,901
1985	110	95	14.5	1,378	35,828
1986	102	90	14.0	1,260	30,870
1987	98	87	16.0	1,392	34,104
1988	96	86	16.0	1,376	36,464

APPLES: PRODUCTION AND VALUE, VERMONT, 1978 - 1988

YEAR	TOTAL PRODUCTION 1/	UTILIZED PRODUCTION	PRICE PER UNIT	VALUE OF UTILIZED PRODUCTION
	1,000 42-Pound Units		Dollars	1,000 Dollars
1978	1,167	1,167	5.37	6,272
1979	1,167	1,167	5.08	5,929
1980	1,190	1,190	6.46	7,682
1981	667	667	7.27	4,852
1982	1,238	1,238	6.17	7,644
1983	1,143	1,143	6.06	6,921
1984	976	976	6.11	5,965
1985	1,167	1,119	6.92	7,742
1986	1,167	1,143	7.42	8,480
1987	1,048	1,000	7.58	7,576
1988	1,071	1,024	8.52	8,729

1/ Estimates relate to production in orchards of 100 or more trees.

MAPLE SYRUP

The production of maple syrup during the 1988 season in Vermont totaled 370,000 gallons, 35 percent more than the disastrous 1987 production. The increase in production from previous year was due to higher yield per tap, as the number of taps remained about the same. The season was reported as being unfavorable, with a short season (about 26 days) and the weather being too cool or too warm. The average opening date was around March 11, while the average closing date was approximately April 5. The sweetness of sap was slightly below normal, with a reported average of 42 gallons of sap to make a gallon of syrup. The color of syrup was mostly medium to light. The 1988 maple crop averaged around $31.80 per gallon compared to $30.50 per gallon for maple syrup produced in 1987. The value of production for the 1988 season totaled $11.8 million, up $3.38 million from the 1987 crop. The higher value of production was due to both the increase in amount produced and average price per gallon from 1987.

MAPLE SYRUP: PRODUCTION AND VALUE, VERMONT, 1978 - 1988

YEAR	PRODUCTION	SEASON AVERAGE PRICE PER GALLON	VALUE OF PRODUCTION
	1,000 Gallons	Dollars	1,000 Dollars
1978	410	13.00	5,330
1979	465	14.20	6,603
1980	315	16.40	5,166
1981	545	17.20	9,374
1982	500	16.50	8,250
1983	495	16.90	8,366
1984	530	17.10	9,063
1985	525	19.00	9,975
1986	338	25.70	8,687
1987	275	30.50	8,388
1988	370	31.80	11,766

MAPLE SYRUP PRICES: BY TYPE OF SALE AND SIZE OF CONTAINER, VERMONT, 1978 - 1988

YEAR	RETAIL					WHOLESALE					ALL SALES EQUIVALENT PER GALLON
	GAL	1/2 GAL	QUART	PINT	1/2 PINT	GAL	1/2 GAL	QUART	PINT	1/2 PINT	
	Dollars										
1978	12.93	7.27	4.35	2.89	1.88	11.44	6.62	3.89	2.49	1.54	13.00
1979	14.26	8.08	4.86	3.21	2.07	13.10	7.47	4.35	2.77	1.74	14.20
1980	16.64	9.28	5.49	3.56	2.39	15.50	8.89	5.09	3.15	2.12	16.40
1981	18.60	10.40	6.06	3.86	2.51	17.36	9.54	5.43	3.34	2.19	17.20
1982	18.39	10.49	6.05	3.80	2.51	16.55	8.99	5.21	3.25	2.00	16.50
1983	17.95	10.25	6.03	3.82	2.56	16.18	9.17	5.28	3.18	2.10	16.90
1984	18.08	10.25	6.01	3.77	2.60	16.39	9.53	5.31	3.31	2.22	17.10
1985	19.05	10.80	6.35	4.00	2.65	17.85	9.90	5.70	3.45	2.25	19.00
1986	23.45	13.70	8.00	5.05	3.35	23.30	13.60	7.50	4.40	2.80	25.70
1987	28.10	16.60	9.20	5.90	3.90	27.40	16.50	9.10	5.25	3.20	30.50
1988	33.00	19.05	10.70	6.65	4.20	32.05	17.45	9.80	5.40	3.20	31.80

FARM PRODUCTION EXPENDITURES, NORTHEAST 1/ AND UNITED STATES, 1988

EXPENDITURE 2/	NORTHEAST		UNITED STATES	
	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/
	Dollars	Million Dollars	Dollars	Million Dollars
TOTAL FARM PRODUCTION EXPENDITURES	52,008	7,861	54,956	118,362
LIVESTOCK & POULTRY:	3,903	590	6,318	13,607
Cattle Purchased	2,713	410	5,171	11,138
Hogs & Pigs Purchased	519	78	607	1,308
Poultry Purchased	460	70	298	641
Sheep and Lambs Purchased	8	1	87	187
Other Livestock & Poultry Expenses	204	31	154	333
FEED:	10,275	1,553	8,318	17,915
Grains	1,095	166	1,733	3,732
Hays & Forages	614	93	903	1,945
Complete Rations or Formula Feeds	6,089	920	3,071	6,613
Protein Meals or Concentrates	1,749	264	1,603	3,454
Supplements	400	60	642	1,382
Minerals, Salts & Additives	328	50	366	788
FARM SERVICES:	8,187	1,237	11,436	24,630
Crop Custom Services	432	65	800	1,723
Livestock Custom Services	42	6	280	602
Transportation	933	141	514	1,108
Rent	1,516	229	4,652	10,020
Cash Rent	1,286	194	2,234	4,812
Share Rent	230	35	2,418	5,208
Marketing & Storage Expenses	656	99	769	1,656
Insurance	1,168	176	1,282	2,761
Leasing 5/	142	21	206	444
Miscellaneous Farm Business Expenses 6/	732	120	893	1,923
Utilities	1,601	242	1,463	3,150
Electricity	1,392	210	1,230	2,650
AGRICULTURAL CHEMICALS & SPRAYS: 7/	1,240	187	1,792	3,859
FERTILIZER: 8/	2,466	373	3,230	6,958
Commercial Fertilizers	2,133	322	3,039	6,544
INTEREST:	3,000	453	3,884	8,365
Farm Real Estate	2,309	349	2,656	5,721
Operating Loans	691	104	1,228	2,644
TAXES (PROPERTY & REAL ESTATE): 9/	1,998	302	1,824	3,928
LABOR EXPENSES:	7,128	1,077	4,747	10,224
Cash Wages	5,674	858	3,737	8,048
FUELS & LUBRICANTS:	1,766	267	2,006	4,450
Diesel	788	119	984	2,119
Gasoline - Bulk	430	65	446	961
Gasoline - Service Station	138	21	211	455

FARM PRODUCTION EXPENDITURES, NORTHEAST 1/ AND UNITED STATES, 1988

EXPENDITURE 2/	NORTHEAST		UNITED STATES	
	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/	AVERAGE PER FARM 3/	TOTAL EXPENDITURE 4/
	Dollars	Million Dollars	Dollars	Million Dollars
FARM SUPPLIES:	1,690	255	1,044	2,249
Supplies Used in Production	1,163	176	787	1,695
Containers Used for Marketing	527	80	258	555
BUILDING & FENCING:	1,687	255	1,034	2,226
New Construction & Remodeling	1,189	180	698	1,503
FARM AND LAND IMPROVEMENTS:	444	67	438	943
New Construction	338	51	297	640
TOTAL FARM MACHINERY:	5,983	904	5,340	11,501
SEEDS AND PLANTS:	1,382	209	1,714	3,692
TRUCKS AND AUTOS:	666	101	956	2,058
Trucks including beds, hydr. systems, etc.	618	93	839	1,807

1/ Includes eleven states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.
2/ Farm share.
3/ Total expenditure divided by number of farms.
4/ Totals may not add, due to rounding.
5/ Includes equipment renting.
6/ Excludes telephone and water, but includes irrigation water cost.
7/ Excludes seed treatments.
8/ Includes materials and applications.
9/ Includes landlord expenditures.

FARM BALANCE SHEET (Excluding Farm Households), VERMONT, DECEMBER 31, 1983 - 1987

ITEM	1983	1984	1985	1986	1987
	Million Dollars				
Assets:					
Real Estate 1/	1,287.5	1,468.9	1,606.9	1,754.3	1,838.0
Livestock and Poultry 2/	222.1	207.8	202.1	201.0	192.5
Machinery and Motor Vehicles 3/	334.7	319.4	283.9	271.1	257.6
Crops 4/	68.6	69.3	70.5	48.6	55.4
Financial Assets	79.8	82.7	97.2	100.5	99.9
TOTAL FARM ASSETS	1,992.7	2,148.1	2,260.6	2,375.6	2,443.4
Claims:					
Real Estate Debt 5/	190.6	184.8	187.2	180.0	165.8
Non-Real Estate Debt 6/	154.9	160.3	146.9	133.7	128.9
TOTAL FARM DEBT	345.5	345.1	334.1	313.7	294.7
Equity	1,647.2	1,803.0	1,926.5	2,061.9	2,148.7

1/ Excludes value of operator dwellings.
2/ Excludes horses, mules, and broilers.
3/ Includes only farm share value for trucks and autos.
4/ All non-CCC crops held on farms plus the value above loan rate for crops held under CCC.
5/ Excludes debt on operator dwellings, but includes CCC storage and drying facility loans.
6/ Excludes debt for non-farm purposes.

FARM PRODUCTION EXPENSES, VERMONT, 1983 - 1987

CURRENT FARM OPERATING EXPENSES	1983	1984	1985	1986	1987
	Million Dollars				
Feed	127.5	108.5	96.2	85.4	79.7
Livestock & Poultry	3.8	5.6	5.2	5.4	6.5
Seed	2.7	3.1	3.0	2.7	2.7
Fertilizer, Lime & Pesticides	11.9	12.4	14.4	10.3	8.1
Fuel & Oil	15.4	14.6	13.5	9.8	9.1
Repair and Operation	21.2	21.2	24.6	27.3	28.1
Labor	29.9	29.6	30.0	30.2	32.9
Interest	33.8	34.3	35.3	32.4	30.3
Property Taxes	17.1	16.1	17.9	18.0	19.1
Miscellaneous Expenses	76.9	75.0	61.6	66.9	65.3
Capital Consumption	71.9	69.1	79.7	79.8	74.2
Net Rent to Non-Operator Landlords	-1.5	.2	-.2	.8	-.8
TOTAL PRODUCTION EXPENSES	410.7	389.9	381.2	369.0	355.0

Farm Income, Vermont, 1983 - 1987

ITEM	1983	1984	1985	1986	1987
	Million Dollars				
Gross Income					
Cash Receipts from Farm Marketings	431.6	401.6	387.5	396.6	412.4
Government Payments	1.5	8.5	6.4	12.3	7.1
Other Farm Income	6.9	9.8	11.2	11.4	11.6
Non Cash Income	50.8	53.0	55.5	62.7	69.1
Farm Production Expenses	410.7	389.9	381.2	369.0	355.0
Value of Inventory Adjustment	-13.2	-5.8	.2	-14.7	-21.5
Net Farm Income	67.0	77.2	79.6	99.4	123.6

CROP AND LIVESTOCK PRODUCTION: RANK AMONG STATES, VERMONT AND NEW ENGLAND, 1988

ITEM	UNIT	VERMONT			NEW ENGLAND		
		PRODUCTION	RANK	%U.S. TOTAL	PRODUCTION	RANK	%U.S. TOTAL
		1,000			1,000		
CROPS:							
Corn for Silage	tons	1,376	16	1.7	3,796	6	4.8
Maple Syrup	gallons	370	n/a	n/a	564	n/a	n/a
Hay, All	tons	771	38	.6	1,867	28	1.5
Apples	42-pound	1,024	23	.5	8,107	8	3.8
LIVESTOCK AND POULTRY:							
Eggs	each	54,000	45	.1	2,840,000	9	4.1
Milk	pounds	2,387,000	15	1.6	4,377,000	9	3.0
Wool	pounds	98	34	.1	412	29	.5
Sheep	head	1.7	36	.1	13.4	20	1.0
Lambs	head	8.2	34	.1	33.7	29	.6
Hogs and Pigs	head	8.9	47	*	74.8	37	.1
Cattle	head	51	41	.1	128	38	.3
Calves	head	110	32	1.1	188.9	19	1.8

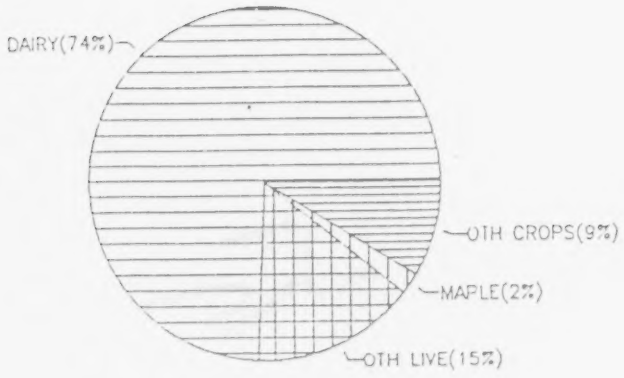
* Less than .05 percent

FARMS: NUMBER AND LAND, VERMONT AND NEW ENGLAND, 1977 - 1988 1/

YEAR	VERMONT			NEW ENGLAND		
	NUMBER OF FARMS	AVERAGE SIZE	LAND IN FARMS	NUMBER OF FARMS	AVERAGE SIZE	LAND IN FARMS
		Acres	1,000 Acres		Acres	1,000 Acres
1977	6,700	261	1,750	28,300	182	5,155
1978	7,000	250	1,750	28,700	180	5,165
1979	7,300	238	1,740	29,900	173	5,165
1980	7,700	226	1,740	30,660	169	5,185
1981	8,200	220	1,800	30,920	169	5,225
1982	7,500	227	1,700	30,000	169	5,075
1983	7,500	227	1,700	30,200	167	5,045
1984	7,300	233	1,700	29,650	170	5,038
1985	7,000	229	1,600	28,950	169	4,893
1986	7,100	225	1,600	28,650	169	4,843
1987	7,200	222	1,600	28,650	169	4,833
1988	7,100	223	1,580	28,750	167	4,792

1/ A farm is a place that sells or normally would sell $1,000 of agricultural products.

VERMONT
1987 CASH RECEIPTS



CASH RECEIPTS: VERMONT, 1985 - 1987

COMMODITY	1985	1986	1987	COMMODITY	1985	1986	1987
	1,000 Dollars				1,000 Dollars		
CROPS				LIVESTOCK			
Hay	7,990	9,835	9,151	Cattle/Calves	29,207	36,273	54,148
Misc. Veg	2,814	2,822	2,916	Hogs	1,048	1,207	1,113
Apples	6,747	8,161	8,495	Sheep/Lambs	914	750	664
Berries	795	840	890	Dairy Products	315,285	315,808	313,607
Misc. Fruit	10	10	10	Chickens, Farm	125	91	105
Maple	9,975	8,687	8,388	Eggs	5,081	4,418	4,700
Forest Prod	3,500	9,300	9,600	Other Poultry	153	234	245
Green/Nursery	3,500	3,770	4,050	Misc. Livestock	2,034	2,133	2,321
Misc. Crops	1,790	1,600	1,575	TOTAL LIVESTOCK	353,847	360,914	376,903
TOTAL CROPS	37,121	45,025	45,075				
				ALL COMMODITIES	390,968	405,939	421,978

UNITED STATES: CIVILIAN PER CAPITA CONSUMPTION OF MAJOR FOOD COMMODITIES (RETAIL WEIGHT) 1/, 1980 - 1987 2/

COMMODITY	1980	1981	1982	1982	1984	1985	1986	1987 2/
	Pounds							
MEATS 3/	147.4	145.0	138.4	143.2	112.8	144.1	140.2	135.4
Beef	76.4	77.1	76.8	78.2	78.1	78.8	78.4	73.4
Veal	1.5	1.6	1.7	1.6	1.8	1.8	1.9	1.5
Lamb and Mutton	1.4	1.4	1.5	1.5	1.5	1.4	1.4	1.3
Pork	68.1	64.9	58.5	61.9	61.5	62.0	58.6	59.2
FISH (edible weight)	12.8	12.9	12.3	13.1	13.7	14.4	14.7	15.4
Canned	4.5	4.8	4.3	4.8	4.9	5.1	5.4	5.1
Fresh and Frozen	8.0	7.8	7.7	8.0	8.5	9.0	9.0	10.0
Cured	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
POULTRY PRODUCTS								
Eggs	34.4	33.5	33.5	33.0	32.9	32.9	31.7	31.6
Chicken (ready-to-cook)	49.8	51.3	52.7	53.4	55.2	57.6	58.7	62.7
Turkey (ready-to-cook)	10.5	10.7	10.8	11.2	11.3	12.1	13.3	15.1
DAIRY PRODUCTS								
Cheese (excluding cottage)	17.5	18.2	19.9	20.5	21.4	22.5	23.0	24.0
Fluid Whole Milk 4/	147.0	139.6	134.1	130.8	126.6	122.7	115.4	109.9
Fluid Lowfat Milk 5/	91.2	92.9	93.1	95.9	99.1	104.6	110.4	113.6
Fluid Cream 6/	3.4	3.4	3.5	3.6	4.0	4.3	4.6	4.7
Yogurt	2.6	2.5	2.6	3.2	3.7	4.0	4.3	4.6
Ice Cream (product weight)	17.5	17.4	17.6	18.0	18.1	18.1	18.4	18.3
FATS AND OILS (fat content only) 7/	57.2	57.7	58.2	60.0	58.6	64.0	64.1	62.7
Butter (product weight)	4.5	4.2	4.3	4.9	4.9	4.9	4.6	4.6
Margarine (product weight)	11.3	11.1	11.0	10.4	10.4	10.8	11.4	10.5
Shortening	18.4	18.2	18.5	18.6	18.5	21.2	22.8	22.0
Lard (direct use)	2.6	2.5	2.5	2.1	2.1	1.8	1.7	1.8
Edible tallow (direct use)	1.1	1.0	1.3	2.1	1.7	1.9	1.8	1.0
Salad and Cooking Oils	21.2	21.8	21.8	23.5	19.8	23.5	24.1	25.2
FRUIT								
Selected Fresh Fruits 3/	86.4	83.1	83.7	88.4	87.8	86.3	93.2	98.6
Citrus	27.9	24.1	23.9	28.3	23.2	22.6	26.6	27.2
Apples	18.3	16.1	17.1	17.6	17.6	16.6	17.3	20.3
Other noncitrus	40.2	42.9	42.7	42.4	47.0	47.1	49.3	51.2
Canned Fruit 8/	10.7	10.0	9.7	9.2	8.9	8.5	8.4	8.7
Frozen Fruit	1.1	1.1	1.3	1.2	1.2	1.3	1.4	1.9
Dried Fruit	2.2	2.5	2.7	2.8	2.9	2.9	3.0	3.1
VEGETABLES								
Selected Fresh Vegetables 9/	72.8	71.5	74.2	74.7	78.8	78.8	79.9	78.6
Selected Vegetables for Processing 3/ 10/	105.2	100.2	98.5	100.4	108.6	104.4	103.4	104.2
Tomatoes for Processing 10/ 11/	63.6	59.3	60.1	60.8	68.4	63.1	63.4	64.6
Cucumbers for Pickling 10/	5.6	5.7	5.7	5.8	5.8	5.8	5.3	5.1
Other Vegetables for Canning 10/ 21/	21.4	20.7	19.2	19.0	17.0	18.7	19.0	17.4
Vegetables for Freezing 10/ 13/	14.6	14.6	13.6	14.8	17.4	16.9	15.8	17.1
POTATOES								
White Potatoes								
Fresh	49.0	43.8	44.8	47.9	46.8	44.7	47.6	45.1
Frozen	17.9	19.1	20.1	19.1	20.7	22.0	22.0	23.2
Canned	1.2	1.1	1.2	1.2	1.1	1.2	1.1	1.1
Dehydrated	1.3	1.5	1.4	1.4	1.4	1.6	1.5	1.5
Chips and Shoestrings	4.1	4.1	4.2	4.4	4.4	4.3	4.5	4.3
Sweet Potatoes 10/	4.4	4.7	5.4	4.7	4.7	5.3	4.8	4.4
GRAINS								
Wheat Flour 14/	116.8	115.8	116.7	117.4	118.1	123.3	123.6	128.0
Rice	9.4	11.0	11.8	9.7	8.6	9.1	11.6	13.4
Pasta	10.0	10.0	9.9	10.5	11.3	12.9	14.4	17.1
Breakfast Cereals	12.9	13.0	13.1	13.4	14.0	14.4	14.8	15.2

UNITED STATES: CIVILIAN PER CAPITA CONSUMPTION OF MAJOR FOOD COMMODITIES (RETAIL WEIGHT) 1/, 1980 - 1987 2/

COMMODITY	1980	1981	1982	1982	1984	1985	1986	1987 2/
				Pounds				
CALORIC AND LOW-CALORIE								
Sweeteners 15/ 16/	132.8	133.2	132.5	137.4	142.5	149.3	147.7	151.6
Sugar (refined) 17/	83.6	79.3	73.6	71.0	67.6	63.4	60.8	62.4
Corn Sweeteners (dry weight) 15/ 18/	40.2	44.5	48.1	52.1	57.8	66.5	67.1	68.8
Low-calorie Sweeteners 19/	7.7	8.2	9.5	12.9	15.8	18.1	18.5	19.0
OTHER								
Coffee	7.7	7.7	7.6	7.6	7.5	7.6	7.6	7.6
Cocoa (chocolate liquor equiv.)	2.7	2.9	3.0	3.2	3.4	3.7	3.8	3.9
Peanuts (shelled)	4.8	5.5	5.9	5.9	6.0	6.3	6.4	6.4
Dry Edible Beans, Peas, & Lentils 10/	5.8	5.8	6.9	7.2	5.5	7.4	7.1	8.3
Soft Drinks (gallons)	27.1	27.1	26.9	26.9	27.2	29.1	30.3	--
Citrus juice (gallons)	5.1	4.8	5.1	5.6	4.8	5.2	5.6	5.3

1/ Quantity in pounds, retail weight unless otherwise shown. Data on calendar year basis except for dried fru
fresh citrus fruits, peanuts and rice which are on a crop-year basis.
2/ Preliminary.
3/ Total may not add because of rounding.
4/ Plain and flavored.
5/ Lowfat, skim, buttermilk, and flavored drinks.
6/ Heavy cream, light cream, and half and half.
7/ Includes 80 percent of the product weight of butter and margarine and all of the product weight and other fa
and oils, some of which are not shown separately.
8/ Excludes apples, applesauce, cranberries, pineapple, and citrus sections.
9/ Includes asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, onions, and tomatoes.
10/ Farm weight.
11/ Used in such processed products as ketchup, canned tomatoes, tomato paste, and tomato puree.
12/ Includes asparagus, carrots, green peas, snap beans, and sweet corn.
13/ Includes asparagus, broccoli, carrots, cauliflower, green peas, snap beans, and sweet corn.
14/ White, whole wheat, semolina, and durum flour.
15/ Dry weight equivalent.
16/ Includes edible syrups and honey.